E-Cigarette Retailer Hazardous Waste Management

Division of Waste and Hazardous Substances, Compliance and Permitting Section

Nicotine and the Environment

Nicotine is historically associated with traditional cigarettes. However, as cigarette smoking has become less common, manufacturers have developed alternatives to traditional smoking. Despite these alternatives, one ingredient typically remains-nicotine.

Nicotine is a listed, acute hazardous waste (P075). Wastes containing nicotine are required to be managed in accordance with 7 DE Admin. Code §1302, Delaware's *Regulations Governing Hazardous Waste* (DRGHW). As a regulated hazardous waste, nicotine and nicotine-containing wastes cannot be disposed in your business's regular trash. Nicotine-containing liquids, including rinse waters, cannot be poured down the drain. DRGHW and additional guidance for managing nicotine and other pharmaceutical waste, including the Pharmaceutical Waste Management Guide, can be found at de.gov/dwhs.

Identifying Nicotine Hazardous Waste

When identifying nicotine-related waste generated by your business, even a minimal concentration of nicotine in the waste subjects it to regulation. Examples of wastes that frequently contain nicotine and are subject to regulation and management as P075 acute hazardous waste include:

- E-cigarettes, vape pens, and vape mods
- Prepackaged e-liquid/e-juice cartridges (including nicotine salts), vials, and pods
- Expired, damaged, or otherwise unsalable nicotine solutions or nicotine-containing items
- Empty containers, vape pens, mods, e-cigarettes that once held nicotine-containing solutions
- Gloves, personal protective equipment (PPE), and clean-up items (e.g., rags, paper towels, absorbents) that have come into contact with nicotine-containing solutions

E-Cigarette Retailers Are Healthcare Facilities

Healthcare facilities are typically thought to be hospitals, nursing homes, and other locations where medical treatments are offered. However, a "healthcare facility" as defined in §266.500 includes "retailers of pharmaceuticals." Within DRGHW, some nicotine products are considered a "pharmaceutical." A pharmaceutical is defined as:

*"…any drug or dietary supplement for use by humans or other animals; **any electronic nicotine delivery system (e.g., electronic cigarette or vaping pen); or any liquid nicotine (e-liquid) packaged for retail sale for use in electronic nicotine delivery systems (e.g., pre-filled cartridges or vials)**. This definition includes, but is not limited to, dietary supplements, as defined by the Federal Food, Drug and Cosmetic Act; prescription drugs, as defined by 21 CFR 203.3(y); over-the-counter drugs; homeopathic drugs; compounded drugs; investigational new drugs; pharmaceuticals remaining in non-empty containers; personal protective equipment contaminated with pharmaceuticals; and clean-up material from spills of pharmaceuticals."*

As nicotine-containing waste described above is both a pharmaceutical and a listed, acute hazardous waste, it is categorized as a "hazardous waste pharmaceutical" when generated. DRGHW Part 262 addresses the management of nicotine as a listed acute hazardous waste and Part 266 Subpart P addresses the management of nicotine waste as a hazardous waste pharmaceutical by healthcare facilities. As e-cigarette retailers generate regulated nicotine and nicotine-containing pharmaceutical wastes, the regulations of Part 266 Subpart P are applicable to your business. Whether managing the nicotine-containing waste in accordance Subpart P is required or optional is dependent on your site's generator category.

Determining Generator Category

Hazardous waste generator category is based on the total amount of hazardous waste generated at your business location in a calendar month. Therefore, you must include all hazardous waste, not just nicotine and nicotine-containing waste in your determination. Also note that nicotine is a listed, acute hazardous waste (P075), and generation of more than 1 kilogram (2.2 pounds) in a calendar month makes your business a large quantity generator (LQG) of hazardous waste.

For additional guidance in determining your site's generator category, please review the Hazardous Waste Management: Waste Determinations fact sheet for tools to evaluate other waste prior to disposal. Once you've identified and calculated the amount of hazardous waste generated in a month, utilize the table on the following page to determine your site's generator category.

Unsalable Products

When counting hazardous waste to determine your business' generator category, you do not need to count unsalable nicotine-containing products that are being returned to a reverse logistics center. Be aware, unsalable products being returned to a reverse logistics center must be managed as if the items have value as used, reused, or reclaimed products and there must also be a reasonable expectation the unsalable products will be lawfully

accepted by the reverse logistics center. If the unsalable product can't meet these standards, the nicotine-containing products are solid waste requiring an accurate hazardous waste determination prior to disposal. If the waste is determined to be hazardous, it must be counted towards determining generator category.

Generator Category	
Size:	**Monthly Generation Quantity:**
VSQG	≤ 100 kg (~220 lbs) and **≤ 1 kg (~2.2 lbs) acute hazardous waste** and **≤ 100 kg (~220 lbs) acute hazardous waste clean-up residue**
SQG	> 100 – < 1,000 kg (~220 – 2,200 kg) and **≤ 1 kg (~2.2 lbs) acute hazardous waste**
LQG	≥ 1,000 kg (~2,200 lbs) or **> 1 kg (~2.2 lbs) acute hazardous waste** or **> 100 kg (~220 lbs) acute hazardous waste clean-up residue**

Empty Containers and Container Residues

When identifying hazardous waste, know that containers that once held nicotine-containing products cannot be thrown into the trash. These containers must be "RCRA-empty" prior to being exempted from hazardous waste regulation because nicotine residues are regulated as a hazardous waste.

A container that once held a hazardous waste pharmaceutical is RCRA-empty if the container was emptied through commonly employed methods **and** meets the empty container criteria in §261.7(c) and §266.507. There four different empty container standards within §266.507 which are categorized by container type; however, only the "other containers, including delivery devices" standards of §266.507(d) are applicable for e-cigarette and vaping device retailers. The standard states that hazardous waste pharmaceuticals and the residues remaining in "other containers", such as inhalers or nebulizers must be managed as hazardous waste. This means that vaping devices, e-cigarettes, and accessories (e.g., pods, mods, coils, etc.) that once held nicotine-containing substances cannot be considered RCRA-empty and must always be managed as a hazardous waste.

It is not permissible to rinse a container that once held a hazardous waste pharmaceutical. This means that empty or partially used vaping devices, e-cigarettes and associated accessories cannot be rinsed, cannot be considered RCRA-empty, and must be always managed as hazardous waste.

When calculating monthly hazardous waste generation amounts, only the residue or remaining liquid within a container/delivery device, not the container itself, is required to be counted. However, if it is easier, you may count the combined weight of the container and residue within it. Be aware that you cannot alternate how you count hazardous waste when determining your site's generator category, meaning you must either count only the weight of the residue or count the weight of the container and the residue it holds.

Applicability of Part 266 Subpart P

If an e-cigarette retailer operates as a VSQG after totaling the amount of **all** hazardous waste generated in a calendar month (the total amount of non-pharmaceutical hazardous waste and pharmaceutical hazardous waste), the site's hazardous waste pharmaceuticals can either be managed in accordance with §262.14 or Part 266 Subpart P.

Many e-cigarette retailers will meet VSQG criteria. Therefore, the remainder of this fact sheet focuses on the management of nicotine-containing waste generated by VSQGs.

If a site operates as SQG or LQG of hazardous waste, the site is required to manage all hazardous waste pharmaceuticals in accordance with Part 266 Subpart P. Please refer to the Pharmaceutical Waste Management Guide for guidance, as more stringent requirements must be followed. All other types of hazardous waste generated by the site, including tobacco manufacturing hazardous waste, are required to be managed under Part 262. Regulatory guidance for Part 262 is found within the Basic Business Guide to Hazardous Waste Management.

Types of Hazardous Waste Pharmaceuticals

Part 266 Subpart P categorizes hazardous waste pharmaceuticals into three types, "potentially creditable hazardous waste pharmaceutical," "non-creditable hazardous waste pharmaceutical," and "evaluated hazardous waste pharmaceutical." The first two types of hazardous waste pharmaceuticals are managed by healthcare facilities, while the third type, "evaluated hazardous waste pharmaceuticals," are only managed by reverse distributors. E-cigarette retailers need only be familiar with the requirements for non-creditable hazardous waste pharmaceuticals.

A **"potentially creditable hazardous waste pharmaceutical"** is a prescription hazardous waste pharmaceutical that has a reasonable expectation to receive manufacturer credit. As non-prescription over-the-counter (OTC) pharmaceuticals are not included in this definition, OTC nicotine-containing products are **not** a potentially creditable hazardous waste pharmaceutical. However, this doesn't mean that nicotine-containing products that become unsalable are automatically a hazardous waste. If the unsalable item has a reasonable

expectation of being legitimately used, reused, or reclaimed, the item is not a solid waste. For an unsalable OTC nicotine-containing product to meet this standard, it must be sent to a reverse logistics center for management. If the item will be disposed of or has no reasonable expectation to be lawfully used, reused, or reclaimed, it is a waste identified as a "non-creditable hazardous waste pharmaceutical."

A **"non-creditable hazardous waste pharmaceutical"** is a:

- prescription hazardous waste pharmaceutical that does not have a reasonable expectation to be eligible for manufacturer credit; or
- non-prescription hazardous waste pharmaceutical that does not have the reasonable expectation to be legitimately used, reused, or reclaimed.

Examples of non-creditable hazardous waste pharmaceuticals include spent vape pens, spent e-cigarettes, partially full or empty commercially retail packaged e-liquid cartridges or vials, nicotine-containing spill clean-up materials and PPE, and residues remaining in commercially packaged containers. Non-creditable hazardous waste pharmaceuticals are solid waste and subject to all applicable hazardous waste requirements, including but not limited to, hazardous waste determinations, accumulation in properly labeled and maintained containers, and shipping off-site to a treatment, storage, or disposal facility (TSDF) for final management.

Nicotine-Containing Hazardous Waste Management Options for VSQG Retailers

VSQGs have three options for managing their hazardous waste pharmaceuticals (e.g., vape pens, e-cigarettes, commercially packaged e-liquids). The following are the combinations of waste management options for VSQGs:

- Manage all hazardous waste, i.e., both hazardous waste pharmaceuticals waste and non-pharmaceutical hazardous waste in accordance with §262.14.
  or
- Manage hazardous waste pharmaceuticals in compliance with the full provisions of Part 266 Subpart P, while managing non-pharmaceutical hazardous waste in accordance with §262.14. A business location using this provision must notify the CAPS that they are opting into full Subpart P regulation. If this option is chosen, the optional provisions of §266.504 for VSQGs are no longer to be used.
  or
- Manage hazardous waste pharmaceuticals using the optional provisions for VSQGs in §266.504, while managing non-pharmaceutical hazardous waste in accordance with §262.14.

Management requirements are different for nicotine-containing hazardous waste pharmaceuticals depending on how a site is managing the waste, i.e., are they managing the waste as a VSQG under §262.14 or under Part 266 Subpart P. The following sections briefly outline the management requirements for both parts. For more in-depth guidance on these management requirements, please see the Basic Business Guide to Hazardous Waste Management and Pharmaceutical Waste Management Guide.

Note that within the definition of RCRA-empty as it relates to hazardous waste pharmaceutical containers, it states that the containers that are not able to be RCRA-empty "must be managed as a non-creditable hazardous waste pharmaceutical." However, a VSQG maintains the option of managing these wastes as a hazardous waste in accordance with §262.14 **or** as a non-creditable hazardous waste pharmaceutical in accordance with Part 266 Subpart P.

A VSQG choosing to manage all nicotine-containing waste as hazardous waste in accordance with §262.14 must:

- Store waste in containers that prevents the release of the waste to the environment (e.g., leaks, spills).
- Keep waste containers closed unless adding or removing waste.
- Label accumulation containers with the phrase "Hazardous Waste" or "Waste" and a description of the contents (see Figure 1). Examples of labeling include "Waste Vape Pens," "Waste Nicotine (P075) Contaminated PPE," and "Waste E-Juice Containers."
- Handle and store containers in a manner that prevents damage and leaks.

Figure 1: Example of a hazardous waste accumulation container label for waste managed under §262.14.

- Maintain accumulation containers in good condition.
- Ship hazardous waste off-site for disposal to a TSDF, utilizing a Delaware permitted hazardous waste transporter; or ship hazardous waste off-site for consolidation to a facility meeting the criteria of

§266.504(b) or 262.14(a)(6)(viii).

- Maintain records documenting waste shipments for three (3) years. VSQGs may use a manifest or other documentation (e.g., bill of lading, tolling agreement) as a shipping record.
- **Always be aware of the total amount of nicotine waste accumulated on-site. Do not exceed the VSQG accumulation limits.** Should an exceedance of the accumulation limit occur, your site is required to immediately comply with the more stringent requirements of §262.14(a)(4), which require you to:
  - Use a hazardous waste manifest to ship the waste off-site for management at a TSDF within 90 days from the date the excess amount of waste was accumulated.
  - Comply with the LQG requirements stated in §262.17(a) through (g). These requirements include, but are not limited to conducting and maintaining documentation of weekly inspections of the accumulation area and the containers stored in the area, creating a contingency plan and meeting the emergency preparedness standards of Part 262 Subpart M, training employees responsible for managing the hazardous waste, implementing emergency procedures, and following accumulation area closure requirements once the waste is shipped off-site.

Please note when a VSQG ships waste off-site for consolidation at a LQG or exceeds VSQG acute hazardous waste accumulation amounts, accumulation containers must be marked with the words "Hazardous Waste" and an indication of the hazards of the waste, per §262.14(a)(6)(viii)(B) and §262.14(a)(4)(ii), respectively. See Figure 2 below for an example of a hazardous waste label with hazard of the contents indicated.

Figure 2: Container labeled with the phrase "Hazardous Waste" and the sticker "Flammable Liquid" to indicate the hazard of the waste within the container.

A VSQG choosing to manage pharmaceutical nicotine-containing waste as a non-creditable hazardous waste pharmaceutical in full compliance with Part 266 Subpart P (§266.502) must:

- Notify the Compliance and Permitting Section (CAPS) that you are opting into Part 266 Subpart P.
- Store waste in containers that prevents release of the waste to the environment (e.g., leaks, spills).
- Keep waste containers closed unless adding or removing waste.
- Accumulate containers in an area that is controlled to prevent unauthorized access to the nicotine-containing waste.
- Label accumulation containers with the phrase "Hazardous Waste Pharmaceuticals" (see Figure 3).
- Handle and store containers in a manner that prevents damage and leaks.
- Maintain accumulation containers in good condition.
- Ensure you do not accumulate non-creditable hazardous waste pharmaceuticals for greater than one year from date of generation. This can be demonstrated by dating the accumulation container, maintaining an inventory log identifying when the waste was generated, or placing all non-creditable hazardous waste pharmaceutical accumulation containers in a designated area and identifying the earliest date the accumulation of non-creditable nicotine-containing items began.
- Ship hazardous waste pharmaceuticals off-site for disposal to a TSDF utilizing a hazardous waste manifest and a Delaware permitted hazardous waste transporter.
- Maintain all manifests for three (3) years from date of shipment.
- Maintain records demonstrating how hazardous waste determinations were made on each type of non-creditable nicotine-containing waste for three (3) years from the date the waste was last sent off-site to a TSDF. Maintaining documentation of each hazardous waste determination is not required if a site manages all non-creditable nicotine-containing waste as hazardous waste.
- Train personnel on the proper hazardous waste management requirements and how to respond to emergencies. Maintain records of the personnel training for three (3) years.

Figure 3: Example of a non-creditable hazardous waste pharmaceutical accumulation container label.

A VSQG utilizing the optional waste consolidation provisions of §266.504 must:

- Send potentially creditable hazardous waste pharmaceuticals to a reverse distributor (§266.504(a)) – this option is not afforded to e-cigarette retailers. The option still remains to send nicotine-containing products to a reverse logistics center should it meet the aforementioned criteria.
- Send hazardous waste pharmaceuticals off-site to another appropriate receiving facility stated in §266.504(b), provided that:
  - The receiving site is a healthcare facility operating under Part 266 Subpart P and meeting the applicable criteria of §266.502(l) and §266.503(b). These criteria require the receiving facility and the VSQG to be under control of the same person/entity (defined in §260.10). As there are no generator categories for sites operating under Part 266 Subpart P, the receiving healthcare facility is not required to be a LQG for non-pharmaceutical hazardous waste. The receiving facility only has to be a healthcare facility that is managing hazardous waste pharmaceuticals in full accordance with Subpart P requirements. Additionally, the receiving facility must keep records of all hazardous waste pharmaceuticals received from a VSQG and manage the waste in accordance with all Subpart P requirements.

    or
  - The VSQG sending the waste is operating under §262.14(a)(6)(viii) and the receiving facility is a non-healthcare facility operating as a LQG under Part 262 and satisfying the conditions for off-site consolidation required in §262.17(f). Again, one of the conditions of this provision is that both the VSQG and the LQG must be under the control of the same person/entity.
- If consolidating under 262.14(a)(6)(viii), label the hazardous waste containers with the phrase "Hazardous Waste" and an indication of the hazards. For example: As nicotine waste carries the toxicity characteristic, the hazardous waste accumulation container holding this waste should be labeled "Hazardous Waste – Toxic Nicotine." If complying with the provisions of 266.504(b), the labeling requirements does not apply to the generator.
- There is no requirement to utilize a permitted hazardous waste transporter to deliver the waste to the receiving facility. A permitted hazardous waste transporter is required for shipments destined to a TSDF from the receiving facility.
- Maintain shipping records for three (3) years for shipments sent to healthcare facilities or LQGs. These records should include the date of the shipment, amount delivered, and receiving facility name and address.

Notification Requirements

SQGs and LQGs must complete a RCRA Subtitle C Site Identification (Notification) Form (EPA Form 8700-12) to obtain an EPA ID number free of charge. VSQGs are encouraged to obtain an EPA ID number, although it is not required unless a VSQG elects to manage hazardous waste pharmaceuticals under the full requirements of Part 266 Subpart P. To notify, complete the EPA Form 8700-12. Forms and instructions are available on the CAPS notification website at de.gov/hazardousreporting.

Sewering Ban (§266.505)

All healthcare facilities – including VSQGs who manage their waste in accordance with §262.14 instead of Part 266 Subpart P – are subject to the sewering ban. The ban prohibits all healthcare facilities from discharging hazardous waste pharmaceuticals to a sewer system that passes through a publicly owned treatment works (POTW). In other words, healthcare facilities are not allowed to dispose of hazardous waste pharmaceuticals by pouring them down the drain or flushing them down the toilet. Healthcare facilities remain subject to the national pretreatment standard prohibitions stated in 40 CFR 403.5(b)(1). Please note that while not explicitly stated in DRGHW's sewering ban regulation, other state and federal regulatory programs prohibit the discharge of hazardous waste (including pharmaceuticals) to septic tanks, privately owned treatment works and federally owned treatment works.

Managing Other Waste Streams

In addition to nicotine-containing waste, e-cigarette retailers have the potential to generate other hazardous waste requiring special management. For example, the lithium ion battery used within a vaping device or e-cigarette is required to be managed as a universal waste battery or a hazardous waste. Several of the most commonly generated hazardous waste by businesses are referred to as "Universal Waste."

Universal Waste

As previously mentioned, all waste generated by your business requires a hazardous waste determination. There are five (5) types of generated waste that are frequently overlooked as they seem common and harmless, despite having the capacity to negatively impact public health and the environment when mismanaged. These wastes are referred to as "Universal Waste" and include:

- Batteries
- Fluorescent lamps
- Aerosol cans
- Mercury-containing devices
- Pesticides

While universal wastes are hazardous waste, they can be managed using streamlined requirements that make it easier to collect, transport and manage these wastes. The universal waste regulations are found in DRGHW Part 273. The CAPS webpage contains several fact sheets discussing the management of universal waste, including Universal Waste Management, Aerosol Can Management, Waste Lamp Management, and Battery Recycling.

Electronic Waste

Another common hazardous waste generated by businesses is electronic waste ("e-waste"). Several common e-wastes generated by businesses include:

- Barcode Scanners
- Cell phones/Telephones
- Computers
- Monitors (CRT, LCD, LED)
- Cash register systems
- Keyboards/Mice
- Headphones
- Printers/Copiers/Fax Machines/Scanners
- Two-way radios

The CAPS encourages generators of e-waste to recycle these wastes with an electronics recycler or to send these wastes to a reverse logistics center. Information on recycling electronic waste may be found in the Electronic Waste Management fact sheet.

This fact sheet is a summary provided as a courtesy to businesses. It is not intended as a substitute for 7 DE Admin. Code 1302, Delaware's *Regulations Governing Hazardous Waste* (DRGHW), Parts 260-266, 268, 273 and 279.
regulations.delaware.gov/AdminCode/title7/1000/1300/1302/

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