



ShipPal List of Hazardous Materials

341 Explosives (Hazard Class 1)

341.1 Definition

An *explosive* is any substance or article, including a device, that is designed to function by explosion (an extremely rapid release of gas and heat) or that, by chemical reaction within itself, is able to function in a similar manner even if not designed to function by explosion, unless the substance or article is otherwise classed under the provisions in 49 CFR.

341.11 Class 1 Divisions

Hazard Class 1 has six divisions as follows:

- a. *Division 1.1* consists of explosives that have a mass explosion hazard. Examples are black powder, nitroglycerine (desensitized), dynamite, most types of torpedoes, and mercury fulminate.
- b. *Division 1.2* consists of explosives that have a projection hazard but not a mass explosion hazard. Examples are certain types of fireworks, some types of detonating fuses, and some types of ammunition.
- c. *Division 1.3* consists of explosives that have a fire hazard and either a minor blast or minor projection hazard or both, but not a mass explosion hazard. Examples are sodium picramate, some liquid and solid propellants, and some rocket motors.
- d. *Division 1.4* consists of explosives that present a minor blast hazard. Examples are common fireworks, toy caps, empty primed grenades, and some small arms ammunition.
- e. *Division 1.5* consists of very insensitive explosives that have a mass explosion hazard. Examples are type E blasting agents, some type B blasting agents, and very insensitive explosive substances.

- f. *Division 1.6* consists of extremely insensitive articles that do not have a mass explosion hazard.

341.12 Class 1 Compatibility Codes

Each division in Class 1 is further assigned a compatibility group code. The compatibility code consists of one letter (A–H, J–L, N, or S) that is positioned after the division number (e.g., 1.1A, 1.2C, 1.4S) and refers to the transportation and storage controls necessary to prevent potential hazards. See 49 CFR 173.52 for a more detailed description of the Class 1 compatibility codes.

341.2 Mailability, Packaging, and Marking

Explosives are generally prohibited from mailing under 18 U.S.C. 1716. The following conditions apply to the mailing of explosives:

- a. *International Mail.* All explosives are prohibited.
- b. *Domestic Mail via Air Transportation.* All explosives are prohibited.
- c. *Domestic Mail via Surface Transportation.* Generally, explosives are prohibited. The only exceptions are for Division 1.4S toy propellant devices and safety fuses that have been approved by the manager, Product Classification, USPS Headquarters, Washington, DC, prior to mailing as stated in [341](#). A shipping paper is required.

341.21 Nonmailable Explosives

Nonmailable explosives found in the mailstream must be immediately reported in accordance with POM 139.117.

Nonmailable explosives include, but are not limited to, the following:

- a. *Common Fireworks.* Fireworks are classified as Division 1.1, 1.2, 1.3, or 1.4 explosives depending on the degree of hazard. Fireworks include roman candles, skyrockets, helicopter–type rockets, cylindrical and cone fountains, pyrotechnic wheels, illuminating torches, firecrackers, salutes, and combinations of items that are designed to produce any of the aforementioned types of effects. All types of fireworks are prohibited from mailing.
- b. *Fuses.* Fuses are classified as Division 1.3 or 1.4 explosives depending on the degree of hazard. All types of fuses (except safety fuses as permitted under [341.22](#)) are prohibited from mailing.
- c. *Small Arms Ammunition.* Ammunition is classified as a Division 1.1, 1.2, 1.3, or 1.4 explosive, depending on the degree of hazard. Ammunition that is regulated as a Class 1 explosive and designed to be fired from a pistol, revolver, rifle, or shotgun, as well as associated primers and blank cartridges (including those designed for tools) and propellant powder for use in any firearm, is prohibited from mailing.

341.22 Mailable Explosives

The following specific types of explosives may be mailed only when the applicable conditions are met. Full responsibility rests with the mailer to comply with Bureau of Alcohol, Tobacco, Firearms and Explosives (BATFE) regulations before mailing.

- a. *Toy Propellant Devices.* The proper shipping name for a toy propellant device is “model rocket motor” or “igniters.” A toy propellant device assigned UN0454 or NA0323 and classed as a Division 1.4S explosive is eligible for mailing in domestic mail via surface transportation

only when prior written permission has been obtained from the manager, Product Classification, USPS Headquarters, Washington, DC. A device approved for mailing is subject to the following conditions:

1. Each device must be ignitable by electrical means only; contain no more than 30 g (1.07 oz) of propellant; and produce less than 80 newton seconds of total impulse with thrust duration not less than 0.050 second.
 2. Each device must be constructed so that all chemical ingredients are preloaded into a cylindrical paper or similarly constructed nonmetallic tube that does not fragment into sharp, hard pieces; must be designed so that it will not burst under normal conditions of use; must be incapable of spontaneous ignition under 500° F; and must not contain any type of explosive or pyrotechnic warhead other than a small, activation–charge, parachute–recovery system.
 3. Each mailpiece containing approved devices must be prepared for mailing following Packaging Instruction 1A in Appendix C. A shipper’s declaration for dangerous goods is required.
- b. **Safety Fuses (UN0105).** Safety fuses consist of a core of black powder over–spun with yarns, waterproofing compounds, and/or tapes. Safety fuses assigned UN0105 as a Division 1.4S explosive may be mailed in domestic mail via surface transportation only when prior written approval has been granted by the manager, Product Classification, USPS Headquarters, Washington, DC. Mailable safety fuses must be prepared using Packaging Instruction 1B in Appendix C. A shipper’s declaration for dangerous goods is required.
- c. **Note:** “Safety Fuses” are not to be confused with “fusees.” Fusees are rail and highway distress signals that are nonmailable Class 4 flammable solids. *Shotgun Hulls, Empty Casings, Nonmetallic Shotgun Hulls, or Casings Without Primers.* These articles are not classified as explosives or hazardous materials under 49 CFR and, therefore, are mailable subject to the applicable mailing rules (see 227).

342 Gases (Hazard Class 2)

342.1 Definition

Hazard Class 2 consists of three divisions:

- a. **Division 2.1, Flammable Gases.** A material that is a gas at 68° F (20° C) or less and 14.7 psi (101.3 kPa) of pressure. Flammable gases also include materials that have a boiling point of 68° F (20° C) or less at 14.7 psi (101.3 kPa) and that are ignitable at 14.7 psi (101.3 kPa) when in a mixture of 13 percent or less by volume with air or that have a flammable range at 14.7 psi (101.3 kPa) with air of at least 12 percent regardless of the lower limit. These conditions must be established in accordance with ASTM E681–85, *Standard Test Method for Concentration Limits of Flammability of Chemicals*, or other approved equivalent method. The flammability of aerosols must be determined using the tests specified in 49 CFR 173.306(i).
- b. **Division 2.2, Nonflammable, Nontoxic Gases.** A material that does not meet the definition of Division 2.1 or 2.3 and exerts in its packaging an absolute pressure of 40.6 psia (280 kPa) or greater at 68° F (20° C).

- c. *Division 2.3, Toxic Gases.* A material that is poisonous by inhalation and is a gas at 68° F (20° C) or less and a pressure of 14.7 psi (101.3 kPa), or a material that has a boiling point of 68° F (20° C) or less at 14.7 psi (101.3 kPa).

342.2 Mailability

The following conditions apply to the mailing of gases:

- a. *International Mail.* All gases are prohibited.
- b. *Domestic Mail via Air Transportation.* Flammable gases in Division 2.1 and toxic gases in Division 2.3 are prohibited. Nonflammable gases in Division 2.2 are generally permitted if the material can qualify as a consumer commodity material and meet the quantity limitations and packaging requirements in [342.3](#) and [342.4](#).
- c. *Domestic Mail via Surface Transportation.* Toxic gases in Division 2.3 are prohibited. Flammable gases in Division 2.1 and nonflammable gases in Division 2.2 are generally permitted if the material can qualify as an ORM–D material and meet the quantity limitations and packaging requirements in [342.3](#) and [342.4](#).

342.21 Nonmailable Gases

When any gas that is nonmailable is discovered in the mailstream, the procedures in POM 139.117 must be followed if the materials present an immediate threat to persons or property. The procedures in POM 139.118 are followed when there is no immediate threat to persons or property.

The following are some specific types of nonmailable gases:

- a. *Cigarette Lighters (NA1057).* Generally, lighters charged with fuel and having an ignition system or any similar heating, lighting, or ignition device are a Class 3 flammable liquid and are nonmailable. However, if an approval number is obtained from DOT, consideration for mailing may be requested from the manager, PCSC under the provisions in [343.25](#).
- b. *Oxygen, Refrigerated Liquid.* Liquid oxygen (UN1073) is prohibited from mailing under any circumstances.
- c. *Fire Extinguishers.* Fire extinguishers (UN0275, UN0276, UN0323, or UN0381) that contain propellant explosives are prohibited from mailing.
- d. **Note:** See [342.22](#) for mailable types of fire extinguishers. *Toxic Gases.* All Division 2.3 toxic gases are prohibited from mailing.

342.22 Mailable Gases

The following are examples of mailable gases:

- a. *Butane.* Butane (UN1011) and Receptacles, small (UN2037) with butane or butane mixtures are Division 2.1 flammable gases. Butane gases that can qualify as ORM–D materials are acceptable only in domestic mail via surface transportation when properly prepared under [342.3](#) and Packaging Instruction 2A in Appendix C.
- b. *Oxygen, Compressed.* Oxygen (UN1072) is a Division 2.2 nonflammable gas and is acceptable in domestic mail only if it can be reclassified as a consumer commodity material (for air or surface), or ORM–D (for surface only). The requirements in [342.3](#) and Packaging Instruction 2B in Appendix C must be followed.
- c. *Propane.* Propane is a Division 2.1 flammable gas and is acceptable in domestic mail via surface transportation only if it can be reclassified as an ORM–D material. The requirements

in 342.3 and Packaging Instruction 2A in Appendix C must be followed. Propane is nonmailable in domestic mail via air transportation.

- d. *Fire Extinguishers*. Extinguishers that contain a Division 2.2 nonflammable compressed gas and are assigned UN1044 are mailable if they do not contain methyl bromide gas mixtures and the contents are held in DOT specification 2P or 2Q containers. Only one extinguisher per mailpiece is permitted, and the compressed gas contained within the fire extinguisher must be nonflammable, nonpoisonous, or noncorrosive as required under 49 CFR 173.309(a). The requirements in Packaging Instruction 2B in Appendix C must be followed.
- e. **Note:** Fire extinguishers assigned UN1774 are mailable as Class 8 corrosives subject to the limitations for corrosives in 348. *Empty Compressed Gas Containers*. Empty used containers of compressed gas are mailable subject to the same restrictions that applied when the container was filled (because residual amounts of the hazardous material might remain present). Empty, unused (i.e., new) containers are mailable without restriction.
- f. *Aerosol Paint Products*. Aerosol paint products that are defined as flammable compressed gases are acceptable in the domestic mail via surface transportation only if they can qualify as ORM-D materials and meet the quantity limitations and applicable packaging requirements in 342.3 and 342.4.
- g. *Other Mailable Gases*. Materials whose contents are under pressure, such as carbonated beverages, biological/medical products, cosmetics, foodstuffs and soaps, electronic tubes, and audible fire alarm systems (except for any that may contain poisonous gases or others that may be specifically excluded by 49 CFR 173.306), are acceptable in the domestic mail as follows:
 - 1. *Carbonated Beverages*. These items are not regulated as hazardous materials and are acceptable without restriction. Carbonated beverages must be properly packaged under DMM 601.1-7.
 - 2. *Biological Products or Medical Preparations*. A product or preparation in a nonrefillable metal primary receptacle charged with a nonflammable solution (containing a biological product or a medical preparation that heat could deteriorate) may be accepted for domestic surface mail only, provided the conditions in Packaging Instruction 2F in Appendix C are followed.
 - 3. *Foodstuffs and Soaps*. These materials are mailable provided the conditions in Packaging Instruction 2D in Appendix C are met.
 - 4. *Electronic Tubes*. These materials are mailable without restriction if the volume is 30 cubic inches or less and the tube is charged with gas to a pressure of 35 psig or less. Such tubes must be packed in a strong outer container and meet the general packaging requirements in DMM 601.1-7.
 - 5. *Audible Fire Alarm Systems*. An audible fire alarm system powered by a compressed gas is acceptable in the domestic mail via surface transportation provided the conditions in Packaging Instruction 2E in Appendix C are followed.

342.3 Packaging

Mailable compressed gases must be packaged to protect valves and fittings and to ensure integrity of the primary receptacle during transport. Containers must use recessed valves, screw thread caps, tap closures, or other means to prevent accidental discharge.

The following conditions apply:

- a. *Nonmetal Containers.* A mailable gas is acceptable in an other-than-metal primary receptacle if the water capacity is 4 fluid ounces (7.22 cubic inches) or less. Packaging Instruction 2A or 2B, as applicable, must be followed.
- b. *Metal Containers.* Mailable nonflammable and flammable compressed gases are acceptable in metal primary receptacles that have a water capacity up to 33.8 fluid ounces (1 liter or 61.0 cubic inches). The liquid content of the material and the gas must not completely fill the primary receptacle at 130° F (55° C). Additionally, the following apply:
 1. A DOT 2P container must be used if the internal pressure is from 140 psig to 160 psig at 130° F (55° C).
 2. A DOT 2Q container must be used if the pressure is from 161 psig to 180 psig at 130° F (55° C).
 3. Packaging Instruction 2A or 2B, as applicable, must be followed.
- c. A container with an internal pressure over 180 psig at 130° F (55° C) is prohibited from mailing.
- d. *Flammable Gases.* A mailable flammable compressed gas is restricted to 4 fluid ounces in a nonmetal primary receptacle or 33.8 fluid ounces (1 liter) in a metal primary receptacle per mailpiece Packaging Instruction 2A must be followed.
- e. *Nonflammable Gases.* A mailable nonflammable gas is permitted in individual 4 fluid ounce nonmetal primary receptacles or 33.8 fluid ounce (1 liter) metal primary receptacles. Multiple primary receptacles may be securely packed within a single, strong outer packaging. Each mailpiece must not exceed a total weight of 25 pounds. Packaging Instruction 2B must be followed.

342.4 Marking and Documentation

Parcels containing mailable gases must be marked as follows:

- a. For air transportation, parcels must bear the DOT square-on-point marking. The top and bottom portions of the square-on-point and the border forming the square-on-point must be black, and the center must be white or of a suitable contrasting background. The symbol “Y” must be black, located in the center of the square-on-point, and clearly visible. Mailpieces must also be marked with the proper shipping name “Consumer Commodity” and identification number “ID8000.” Each mailpiece must also bear an approved DOT Class 9 hazardous material warning label (see [Exhibit 325.2b](#)). A properly completed shipper’s declaration for dangerous goods prepared in triplicate must be affixed to the outside of the mailpiece.
- b. For surface transportation, parcels must be plainly and durably marked on the address side with “Surface Only” or “Surface Mail Only” and “ORM-D,” immediately following or below the proper shipping name (e.g., Consumer Commodity). Optionally, mailpieces may be marked with an approved DOT limited quantity square-on-point marking (see [Exhibit 325.3](#)). The top and bottom portions of the square-on-point and the border forming the square-on-point must be black, and the center must be white or of a suitable contrasting background. Surface shipments containing qualifying ORM-D material bearing the square-on-point limited quantity marking are not required to be marked with the shipping name and identification number. A

shipper's declaration for dangerous goods is not required for mailable gases sent via surface transportation.

- c. Markings must be durable, legible, and readily visible, and must be applied on at least one side or one end of the outer packaging. The border forming the square-on-point must be at least 2 mm in width, and the minimum dimension of each side must be 100 mm, unless the package size requires a reduced size marking of no less than 50 mm on each side.

342.5 Mailability Rulings

In addition to the information required in [215.2](#) and [324](#), requests for mailability rulings on gases and products containing compressed gases need to include the following information:

- a. Documentation indicating whether or not the contents are a flammable mixture when dispersed.
- b. The internal pressure within the primary receptacle at 70° F (21° C) and 130° F (55° C).
- c. Documentation as to whether or not the liquid contents completely fill the container at 70° F (21° C) and 130° F (55° C).
- d. The bursting strength of the primary receptacle.
- e. The capacity of the primary receptacle and the number of primary receptacles proposed to be packed within a single mailpiece.
- f. The design methods intended to prevent accidental discharge of the contents.

343 Flammable and Combustible Liquids

(Hazard Class 3)

343.1 Definition

The terms used in the standards that apply to Hazard Class 3 are defined as follows:

- a. *Flammable Liquid* means a liquid that has a flashpoint of not more than 140° F (60° C), or any material in a liquid phase that has a flashpoint at or above 100° F (38° C).
- b. *Combustible Liquid* means any liquid that does not meet the definition of any other hazard class and has a flashpoint above 140° F (60° C) and below 200° F (93° C). A flammable liquid with a flashpoint at or above 100° F (38° C) that does not meet the definition of any other hazard class may be reclassified as a combustible liquid per 49 CFR 173.120(b).

Note: A liquid with a flashpoint above 200° F (93° C) is not regulated as a hazardous material and may be mailed subject to the general packaging requirements in DMM 601.1-7, provided it possesses no characteristics of another hazard class.

343.2 Mailability and Packaging

343.21 Requirements for Flammable Liquids

The following conditions apply:

- a. *International Mail.* Flammable liquid is prohibited.
- b. *Domestic Mail via Air Transportation.* Flammable liquid is prohibited.

- c. *Domestic Mail via Surface Transportation.* Flammable liquid with a flashpoint of 20° F (–7° C) or below is prohibited. Other flammable liquid is permitted if the material can qualify as an ORM–D material and meet the criteria in [Exhibit 343.21](#). A mailable flammable liquid must be prepared according to Packaging Instruction 3A in Appendix C, as applicable.

d.

Flash point	Mailability
20° F (–7° C) or below	Not acceptable for mailing.
Above 20° F (–7° C) but not more than 73° F (23° C)	Acceptable (with restrictions) for domestic mail via surface transportation only. Follow requirements for Packaging Instruction 3A in Appendix C, as applicable.
Above 73° F (23° C) but less than 100° F (38° C)	Acceptable (with restrictions) for domestic mail via surface transportation only. Follow requirements for Packaging Instruction 3A in Appendix C, as applicable.
100° F (38° C) and up to 140°	Acceptable (with restrictions) for domestic mail via surface transportation only. Follow requirements for Packaging Instruction 3A or 3B in Appendix C, as applicable. Note: If the flashpoint is between 100° F (38° C) and 140° F (60° C), the liquid may be eligible to be reclassified as a combustible liquid.

F (60° C)	
Over 140° F (60° C)	See combustible liquids in 343.22 . Follow requirements for Packaging Instruction 3B in Appendix C .

343.22 Requirements for Combustible Liquids

The following conditions apply:

- a. *International Mail*. Combustible liquid is prohibited.
- b. *Domestic Mail via Air Transportation*. Combustible liquid is permitted if the material can qualify as a consumer commodity material and meet the criteria in [Exhibit 343.22](#). Packaging Instruction 3B in Appendix [C](#) must be followed, as applicable.
- c. *Domestic Mail via Surface Transportation*. Combustible liquid is permitted if the material can qualify as a consumer commodity material (for air or surface), or ORM-D (for surface only), and meet the criteria in [Exhibit 343.22](#). Packaging Instruction 3B in Appendix [C](#) must be followed, as applicable.

d.

Flashpoint	Mailability
Below 100° F (38° C)	Not a combustible liquid. See flammable liquids in 343.21 .
100° F (38° C) but not more than 140° F (60° C)	A flammable liquid that may be eligible to be reclassified as a combustible liquid under 49 CFR 173.120(b). See 343.1 . Acceptable (with restrictions) in domestic mail via surface transportation only. Follow requirements for Packaging Instruction 3B in Appendix C , as applicable.
Above 140° F (60° C) but not more than 200° F (93° C)	Acceptable (with restrictions) for domestic mail via air transportation or surface transportation. Follow requirements for Packaging Instruction 3B in Appendix C , as applicable.

Above 200°F (93°C)	The material is not regulated as a hazardous material. Such nonregulated materials must be properly and securely packaged to prevent leakage under the general packaging requirements in DMM 601.3.4.
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343.23 Nonmailable Flammable and Combustible Liquids

When flammable liquids and combustible liquids that are nonmailable under [343.21](#) or [343.22](#) are found in the mailstream, the procedures in POM 139.117 must be followed if the materials present an immediate threat to persons or property.

The following materials are nonmailable:

- All flammable liquids having a flashpoint of 20° F (–7° C) or below are prohibited from mailing.
- Gasoline* (UN1203) is a flammable liquid that normally has a flashpoint of –50° F. Gasoline is nonmailable under any circumstances.
- Acetone (UN1090) normally has a flashpoint of 0° F, Benzene (UN1114) normally has a flashpoint of 12° F, and Hexane(s) (UN1208) normally have flashpoints in the vicinity of –15° F. All are nonmailable unless diluted with less flammable or nonflammable materials sufficient to raise the flashpoint to 20° F or higher.

343.24 Mailable Flammable and Combustible Liquids

The following are mailable:

- Paint* or a related item (UN1263) classified as a flammable or combustible liquid is generally acceptable for mailing provided the material can qualify as a consumer commodity material, or ORM-D (for surface only), and is sent within the quantity limitations and packaging requirements stated in [343.21](#) or [343.22](#), as applicable. Also see [343.26](#). Mailpieces must be prepared following Packaging Instruction 3A or 3B in Appendix C, as applicable.
- Latex Paint* or a similar water-based paint product that is not flammable or combustible is not regulated as a hazardous material, and therefore is not restricted. Also see [343.26](#). Mailpieces must be properly packaged under DMM 601.1-7.
- Canned Heat (Sterno)* is a flammable liquid that normally has a flashpoint from 40° F (4° C) to 80° F (27° C). It is permitted if the material can qualify as a consumer commodity material or ORM-D (for surface only), and is sent within the quantity limitations and packaging requirements stated in [343.21](#). Mailpieces must be prepared following Packaging Instruction 3A in Appendix C.
- Lighter Fluid* is a flammable liquid that normally has a flashpoint between 20° F (–7° C) and 55° F (13° C). It is permitted only in domestic mail via surface transportation provided the fluid can qualify as a consumer commodity material or ORM-D, and is sent within the quantity limitations and packaging requirements stated in [343.21](#). Mailpieces must be prepared following Packaging Instruction 3A in Appendix C.
- Diesel Fuel* (NA1993) is a combustible liquid that normally has a flashpoint between 110° F (43° C) and 190° F (88° C). It is acceptable for mailing provided the fluid can qualify as a consumer commodity material or ORM-D (for surface only), and the liquid is sent within the conditions in [343.22](#). Mailpieces must be prepared following Packaging Instruction 3B in Appendix C.

- f. *Fuel Oil* (NA1993) is a flammable liquid that normally has a flashpoint below 100° F (38° C). The specific flashpoint must be accurately identified by the mailer before a mailability determination can be made. Fuel oil is acceptable if the material can qualify as a consumer commodity material or ORM-D, and is sent within the quantity limitations and packaging requirements stated in [343.21](#) or [343.22](#), as applicable. Mailpieces must be prepared following Packaging Instruction 3A in Appendix C.
- g. *Adhesives and Cements* (UN1133) that are classified as flammable or combustible liquids are mailable only if the material can qualify as a consumer commodity material or ORM-D (for surface only), and the applicable conditions in [343.21](#) or [343.22](#) are met. Mailpieces must be prepared following Packaging Instruction 3A or 3B in Appendix C, as applicable.
- h. **Note:** Some adhesives and cements are extremely toxic and may be classified as Division 6.1 toxic substances. Division 6.1 materials are mailable only as permitted in [346.21.Cleaning Agents and Solvents](#) that are classified as flammable liquids are mailable only if the material can qualify as a consumer commodity material or ORM-D (for surface only), and the applicable conditions in [343.21](#) can be met. Mailpieces must be prepared following Packaging Instruction 3A in Appendix C.
- i. **Note:** Some cleaning agents and solvents are extremely toxic or corrosive and may be classified as either a Division 6.1 toxic substance or a Class 8 corrosive. Division 6.1 toxic materials and Class 8 corrosives are permitted only within the conditions of [346.21](#) and [348.2](#) respectively. *Model Fuel* (for glow-plug engines) is a flammable liquid that has a flashpoint ranging from 65° F to 75° F. It is acceptable if the material can qualify as a consumer commodity material or ORM-D (for surface only), is sent within the quantity limitations, and meets the packaging requirements stated in [343.21](#). Mailpieces must be prepared following Packaging Instruction 3A in Appendix C.
- j. *Waxes and Polishes* have a wide range of flashpoints. The flashpoint and toxicity must be accurately identified by the mailer before mailability can be determined. Any waxes or polishes that are flammable or combustible liquids are permitted to be mailed, provided the material can qualify as a consumer commodity material or ORM-D (for surface only) and the applicable conditions in [343.21](#) and [343.22](#) are met. Mailpieces must be prepared following Packaging Instruction 3A or 3B in Appendix C, as applicable.

343.25 Lighters

A lighter equipped with an ignition element and containing liquid fuel is classified as a Class 3 flammable liquid. A lighter containing a flammable gas is classed as a Division 2.1 flammable gas. A lighter that contains either flammable liquid or flammable gas is permitted only in the domestic mail via surface transportation with prior written approval and within these conditions:

- a. The design of the lighter is certified by a lighter testing agency authorized by the DOT Associate Administrator for Hazardous Materials Safety, per 49 CFR 173.21(i) and 173.308, and an Approval Number (LAA****) is issued.
- b. The prospective mailer of the lighter submits to the PCSC manager a written request for authorization to mail the lighter, accompanied by a legible photocopy of the official DOT notice conveying the approval described in [343.25a](#), along with a specimen of the actual lighter, the packaging materials in which each lighter is to be mailed, and the number of mailpieces and mailing location; the mailer receives from the PCSC manager a letter approving the requested authorization for mailing.

- c. The packaging must be designed to protect the lighter's sparking mechanism from accidental ignition caused by friction or external pressure during transport. Packaging Instruction 3C in Appendix C must be followed.
- d. When presented for mailing, the address side of the mailpiece must prominently display the proper shipping name "Lighter(s)" or "Lighter Refill(s)" followed by the Approval Number (LAA****) and the marking "Surface Only" or "Surface Mail Only," and all preparation and packaging requirements in the PCSC manager's approval letter must be met. A legible photocopy of the PCSC manager's approval must accompany the mailing at the time of deposit.
- e. A shipper's declaration for dangerous goods is not required.

343.26 Paints, Paint-Related Materials, and Inks

The following definitions apply:

- a. *Paint* (UN1263) is the proper shipping name and description for paint, lacquer, enamel, stain, shellac, varnish, liquid aluminum, liquid bronze, liquid gold, liquid wood filler, and liquid lacquer base. *Paint-related material* (UN1263) is the proper shipping name and description for a paint-thinning, paint-drying, paint-reducing, or paint-removing compound. See [343.24a](#) and [343.24b](#) for mailability.
- b. *Inks* are defined as colored liquids used for writing, drawing, etc., and liquids and pastes used in printing. Printing inks usually are mixtures of finely divided pigments, such as carbon black suspended in a drying oil. Inks having hazardous characteristics are generally classified as combustible or flammable liquids and are mailable, provided they can qualify as a consumer commodity material or ORM-D (for surface only), and meet the applicable requirements in [343.21](#) or [343.22](#). Mailpieces must be prepared using Packaging Instruction 3A or 3B in Appendix C, as applicable. In addition, the following conditions apply:
 - 1. Regardless of the size or type of container, the primary receptacle(s) containing inks must be cushioned with sufficient absorbent material to take up all liquid contents in case of leakage.
 - 2. The primary receptacle(s) and the absorbent cushioning material must be packed within a sealed, leakproof outer packaging.
 - 3. Inks that are flammable or combustible liquids must meet the quantity restrictions, packaging requirements, and air or surface transportation conditions that apply under [343.2](#).

Note: Inks that do not possess any hazardous characteristics are not regulated as hazardous materials and are mailable if properly prepared under the standards for packaging liquids in [451.3](#) and DMM 601.3.4.

343.27 Authorization to Mail Ethanol-Based Flammable Liquids or Solids

Flammable liquids or solids that contain ethyl alcohol are eligible to be mailed via domestic air transportation only with prior written authorization.

Mailers must submit a letter of request to the manager, Product Classification (see 214 for address). The request must include a list of each specific product to be mailed under the authorization, an MSDS for each product, the office of mailing, and expected frequency and quantity of mailings.

Approvals are initially provided for the duration of one year. Subsequent approvals are performance-based and will be extended in one- to three-year increments.

If approved, the mailer must:

- a. Present a copy of their authorization letter from the manager, Product Classification (to be kept on file at the office of mailing) at the time of their first mailing at any given Postal Service facility. Mailings not supported by an authorization letter will be refused.
- b. For content containing *not more than* 70% ethyl alcohol by volume, tender only parcels weighing 25 pounds or less. Each *non-glass* primary receptacle must not exceed 16 ounces of flammable liquid or 1 pound of solids. Each *glass* primary receptacle must not exceed 8 ounces of flammable liquid or 1/2 pound of solids. Total volume of flammable material per mailpiece must not exceed 96 ounces for flammable liquids or 16 pounds for flammable solids.
- c. For content containing *more than* 70% ethyl alcohol by volume, tender only parcels weighing 16 pounds or less. Each primary package receptacle must not exceed 8 ounces of flammable liquid or 1/2 pound of solids. Total volume of flammable material per mailpiece must not exceed 48 ounces for flammable liquids or 8 pounds for flammable solids.
- d. Enter parcels using Priority Mail Express, Priority Mail, First-Class Mail, or First-Class Package Service.
- e. Label each parcel on the address side with the mailer's company name and return address.
- f. Label each parcel on the address side with the marking "Contains Air-Eligible Ethyl Alcohol — Authorization Number #," using at least 14-point type.
- g. Ensure that the addressee of each parcel is notified that the addressee is not authorized to re-mail the contents of the parcel via air transportation. The mailer must include the following written notice:
- h. "Flammable liquids or solids contained in these packages may be mailed only by consumers (the addressee) via surface transportation in accordance with USPS Publication 52, section 343. Full responsibility rests with the mailer to comply with all postal and nonpostal statutes and regulations regarding mail. Information regarding postal statutes, regulations, and mailing requirements is available from your local Postmaster or district manager, Business Mail Entry, and at the Postal Service's mailing standards website, Postal Explorer, at pe.usps.com." Comply with the warning and labeling requirements set forth in 21 CFR 700, 701.3, and 740.1 when mailing each parcel.
- i. Comply with all quantity, packaging, and marking requirements in Packaging Instruction 3D in Appendix C.

343.3 Marking and Documentation

Parcels containing mailable flammable or combustible liquids must be marked as follows:

- a. For air transportation, parcels containing mailable Class 3 materials must bear the DOT square-on-point marking. The top and bottom portions of the square-on-point and the border forming the square-on-point must be black, and the center must be white or of a suitable contrasting background. The symbol "Y" must be black, located in the center of the square-on-point, and clearly visible. Mailpieces must also be marked with the proper shipping name "Consumer Commodity" and identification number "ID8000." Each mailpiece must also bear an approved DOT Class 9 hazardous material warning label (see

[Exhibit 325.2b](#)). A properly completed shipper's declaration for dangerous goods prepared in triplicate must be affixed to the outside of the mailpiece.

- b. For surface transportation, parcels containing mailable Class 3 materials must be plainly and durably marked on the address side with "Surface Only" or "Surface Mail Only" and "ORM-D," immediately following or below the proper shipping name (e.g., Consumer Commodity). Optionally, mailpieces may be marked with an approved DOT limited quantity square-on-point marking (see [Exhibit 325.2a](#)). The top and bottom portions of the square-on-point and the border forming the square-on-point must be black, and the center must be white or of a suitable contrasting background. Surface shipments containing qualifying ORM-D material bearing the square-on-point limited quantity marking are not required to be marked with the shipping name and identification number. A shipper's declaration for dangerous goods is not required for mailable Class 3 materials sent via surface transportation.
- c. Markings must be durable, legible, and readily visible, and must be applied on at least one side or one end of the outer packaging. The border forming the square-on-point must be at least 2 mm in width, and the minimum dimension of each side must be 100 mm, unless the package size requires a reduced size marking of no less than 50 mm on each side.
- d. Lighters containing flammable liquids or gases must be marked as specified in [343.25](#).
- e. Ethanol-based flammable liquids or solids must be marked as specified in [343.27](#) and Appendix C, Packaging Instruction 3D.

344 Flammable Solids (Hazard Class 4)

344.1 Definition

Hazard Class 4 consists of three divisions:

- a. *Division 4.1, Flammable Solids*. Any solid material other than one classed as an explosive that, under conditions normally incident to transportation, is likely to cause fires through friction or retained heat from manufacturing or processing, or that can be ignited readily and, when ignited, burns so vigorously and persistently as to create a serious transportation hazard.
- b. *Division 4.2, Spontaneously Combustible*. A liquid or solid pyrophoric material that even in small amounts and without an external ignition source can ignite within 5 minutes after coming in contact with air, or a self-heating material that when in contact with air and without an energy supply is liable to self heat.
- c. *Division 4.3, Dangerous When Wet*. A material that, by contact with water, is likely to become spontaneously flammable or to give off flammable or toxic gas at a rate greater than 1 liter per kilogram of the material per hour.

Examples of flammable solids include certain metallic hydrides, metallic sodium and potassium, oily fabrics, processed metals, matches, and nitrocellulose products.

344.2 Mailability

The following conditions apply:

- a. *International Mail*. All flammable solids are prohibited.

- b. *Domestic Mail via Air Transportation.* All flammable solids are prohibited.
- c. *Domestic Mail via Surface Transportation.* A flammable solid that can qualify as an ORM–D material is permitted.

344.21 Nonmailable Flammable Solids

When flammable solids that are nonmailable under [344](#) are found in the mailstream, the procedures in POM 139.117 must be followed if the materials present an immediate threat to persons or property.

Strike–anywhere matches are nonmailable in international mail and domestic mail. Safety matches (book, card, or strike–on–box) are nonmailable in international and domestic mail via air transportation.

344.22 Mailable Flammable Solids

The following are mailable:

- a. Flammable solids that are eligible to be reclassified as mailable limited quantity or ORM-D materials are permitted in the domestic mail via surface transportation.
- b. Safety matches (book, card, or strike–on–box) are permitted only in domestic mail via surface transportation.

344.3 Packaging, Marking, and Documentation

The following conditions apply:

- a. *Mailable Flammable Solids.* The conditions in Packaging Instruction 4A in Appendix [C](#) must be followed. Mailpieces containing mailable Class 4 materials must be plainly and durably marked on the address side with “ORM–D” immediately following or below the proper shipping name (i.e., Consumer Commodity). Optionally, mailpieces may be marked with an approved DOT limited quantity square-on-point marking (see [Exhibit 325.2a](#)). The top and bottom portions of the square-on-point and the border forming the square-on-point must be black, and the center must be white or of a suitable contrasting background. Surface shipments containing qualifying ORM-D material bearing the square-on-point limited quantity marking are not required to be marked with the shipping name and identification number. A shipper’s declaration for dangerous goods is not required for mailable Class 4 materials sent via surface transportation. When DOT square-on-point markings are used, markings must be durable, legible, and readily visible, and must be applied on at least one side or one end of the outer packaging. The border forming the square-on-point must be at least 2 mm in width, and the minimum dimension of each side must be 100 mm, unless the package size requires a reduced size marking of no less than 50 mm on each side.
- b. *Safety Matches.* The conditions in Packaging Instruction 4B in Appendix [C](#) must be followed. Mailpieces must be plainly and durable marked on the address side with “Surface Only” or “Surface Mail Only” and, as applicable, “Book Matches,” “Strike–on–Card Matches,” or “Card Matches.” A shipper’s declaration for dangerous goods is not required.

345 Oxidizing Substances, Organic Peroxides

(Hazard Class 5)

345.1 Definition

Hazard Class 5 consists of two divisions:

- a. *Division 5.1, Oxidizing Substances*. A material that may, generally by yielding oxygen, cause or enhance the combustion of other materials.
- b. *Division 5.2, Organic Peroxides*. Any organic compound that contains oxygen in the bivalent structure and that may be considered a derivative of hydrogen peroxide, where one or more of the hydrogen atoms have been replaced by organic radicals.

Examples of Class 5 materials (not all of which are mailable) include ferric nitrate, hydrogen peroxide, lead perchlorate, lithium nitrate, organic peroxide solids or liquids, and some swimming-pool chemicals.

345.2 Mailability

The following conditions apply:

- a. *International Mail*. All oxidizing substances and organic peroxides are prohibited.
- b. *Domestic Mail via Air or Surface Transportation*. An oxidizing substance or an organic peroxide that can qualify as mailable limited quantity material or ORM-D material (for surface only) is permitted.

345.21 Nonmailable Class 5 Materials

When nonmailable Class 5 materials are found in the mailstream, the procedures in POM 139.117 must be followed if the materials present an immediate threat to persons or property. The procedures in POM 139.118 are followed when there is no immediate threat to persons or property.

The following Class 5 materials are nonmailable:

- a. *Division 5.1, Oxidizing Substances*.
 1. Chlorine dioxide hydrate, frozen.
 2. Hydrogen peroxide solution (more than 20 percent).
 3. Perchloric acid.
 4. Potassium peroxide.
 5. Sodium chlorite.
 6. Tetranitromethane.
 7. Zinc ammonium nitrate.
- b. *Division 5.2, Organic Peroxides*. Organic peroxides are nonmailable unless they can qualify as mailable limited quantity materials or ORM-D materials (for surface only).

345.22 Mailable Class 5 Materials

The following Class 5 materials are mailable:

- a. *Mailable limited quantity or ORM-D Material*. A division 5.1 or 5.2 material that can be reclassified as mailable limited quantity material or ORM-D material (for surface only) is mailable within the requirements in [345.2b](#).

- b. *Hydrogen Peroxide*. There are no restrictions on Division 5.1 hydrogen peroxide solutions up to 8 percent. Solutions of hydrogen peroxide exceeding 8 percent and up to 20 percent are permitted if they can qualify as mailable limited quantity material or ORM-D material (for surface only).

345.3 Packaging, Marking, and Documentation

Parcels containing mailable oxidizing substances or organic peroxides must be marked as follows:

- a. All mailable Division 5.1 and 5.2 materials must be prepared following the conditions for Packaging Instruction 5A in Appendix C.
- b. For air transportation, parcels containing mailable Division 5.1 or 5.2 materials must bear the DOT square-on-point marking. The top and bottom portions of the square-on-point and the border forming the square-on-point must be black, and the center must be white or of a suitable contrasting background. The symbol “Y” must be black, located in the center of the square-on-point, and clearly visible. Mailpieces must also be marked with the proper shipping name and identification number. Each mailpiece must also bear an approved DOT Class 5.1 or 5.2 hazardous material warning label (see [Exhibit 325.2b](#)). A properly completed shipper’s declaration for dangerous goods prepared in triplicate must be affixed to the outside of the mailpiece.
- c. For surface transportation, parcels containing mailable Division 5.1 or 5.2 materials must be plainly and durably marked on the address side with “Surface Only” or “Surface Mail Only” and “ORM-D,” immediately following or below the proper shipping name (e.g., mailable limited quantity). Optionally, mailpieces may be marked with an approved DOT limited quantity square-on-point marking (see [Exhibit 325.2a](#)). The top and bottom portions of the square-on-point and the border forming the square-on-point must be black, and the center must be white or of a suitable contrasting background. Surface shipments containing qualifying ORM-D material bearing the square-on-point limited quantity marking are not required to be marked with the shipping name and identification number. A shipper’s declaration for dangerous goods is not required for mailable Division 5.1 or 5.2 materials sent via surface transportation.
- d. When DOT square-on-point markings are used, markings must be durable, legible, and readily visible, and must be applied on at least one side or one end of the outer packaging. The border forming the square-on-point must be at least 2 mm in width, and the minimum dimension of each side must be 100 mm, unless the package size requires a reduced size marking of no less than 50 mm on each side.

346 Toxic Substances and Infectious Substances (Hazard Class 6)

346.1 Definitions

Hazard Class 6 consists of two divisions:

- a. Division 6.1 includes toxic substances, poisons, and irritating material. Examples of Division 6.1 materials (not all of which are mailable) include bromobenzyl cyanide, methyl bromide, motor fuel anti-knock mixtures, and tear gas.

- b. Division 6.2 includes infectious substances. Examples of Division 6.2 materials include infectious substances, biological products, regulated medical waste, sharps medical waste, used health care products, and forensic materials.

346.11 Division 6.1

The following terms are used in the standards for Division 6.1 materials:

- a. *Toxic Substance* is a poisonous material, other than a gas, that is known to be so toxic to humans as to cause death, injury, or harm to human health if swallowed, inhaled, or brought into contact with skin.
- b. *Oral Toxicity* refers to a liquid or solid with a lethal dose (LD₅₀) for acute oral toxicity of not more than 300 mg/kg that, when administered by mouth, is likely to cause death within 14 days in half of the test animals.
- c. *Dermal Toxicity* refers to a material with an LD₅₀ for acute dermal toxicity of not more than 1,000 mg/kg that, when administered by continuous contact with bare skin, is likely to cause death within 14 days in half of the test animals.
- d. *Inhalation Toxicity* applies to a dust or mist with a lethal concentration (LC₅₀) for acute inhalation toxicity of not more than 4 mg/L, or a saturated vapor concentration in air at 68° F (20° C) greater than or equal to more than one-fifth of the LC₅₀ for acute toxicity on inhalation of vapors and with an LC₅₀ for acute inhalation toxicity of vapors of not more than 5,000 ml/m³ that, when administered by continuous inhalation for 1 hour, is likely to cause death within 14 days in half of the test animals.
- e. *Irritating Material* is any liquid or solid substance (such as tear gas) that gives off intense fumes and causes extreme but reversible localized irritant effects on the eyes, nose, and throat, temporarily impairing a person's ability to function.

346.12 Division 6.2, Infectious Substances

Division 6.2 materials include infectious substances, biological products, regulated medical waste, sharps medical waste, used health care products, and forensic materials. Division 6.2 materials are not permitted in international mail or domestic mail, except when they are intended for medical or veterinary use, research, or laboratory certification related to the public health; and only when such materials are properly prepared for mailing to withstand shocks, pressure changes, and other conditions related to ordinary handling in transit. Unless otherwise noted, all mailable Division 6.2 materials must meet the mail preparation requirements for air transportation. The following terms are used in the standards for Division 6.2 materials:

- a. *Infectious substance* means a material known or reasonably expected to contain a pathogen. A pathogen is a microorganism that can cause disease in humans or animals. Examples of pathogens include bacteria, viruses, fungi, and other infectious agents. An infectious substance must be assigned to one of the following two packaging categories:
 - 1. *Category A*: An infectious substance transported in a form capable of causing permanent disability or life-threatening or fatal disease in otherwise healthy humans or animals when exposure occurs. Category A infectious substances are nonmailable. A Category A infectious substance is assigned the identification number UN2814 or UN2900, based on the known medical history or symptoms of the source

patient or animal, endemic local conditions, or professional judgment concerning the individual circumstances of the source human or animal.

2. *Category B*: An infectious substance that does not meet the criteria for inclusion in Category A. A mailpiece known or suspected to contain a Category B infectious substance must bear the proper shipping name “Biological Substance, Category B” on the address side of the mailpiece and must be assigned to and marked with identification number UN3373 (as shown in [Exhibit 346.12a2](#) 7or, for regulated medical waste and sharps medical waste, identification number UN3291.

Exhibit 346.12a2

Mailpiece Symbol and Marking for Mailpieces Containing Biological Substance, Category B Substances



- b. *Biological product* means a virus, therapeutic serum, toxin, antitoxin, vaccine, blood, blood component or derivative, allergenic product, or analogous product or arsphenamine or derivative of arsphenamine (or any other trivalent arsenic compound) intended to prevent, treat, or cure a disease or condition of humans or animals. A biological product includes a material subject to regulation under 42 U.S.C. 262 or 21 U.S.C. 151–159. Unless otherwise excepted, mark these mailpieces with identification number UN3373 (as shown in [Exhibit 346.12a2](#)) when they contain a biological product known or reasonably expected to contain a pathogen that meets the definition of a Category B infectious substance.
- c. *Cultures* are infectious substances that result from a process by which pathogens are intentionally propagated. This definition does not include a human or animal patient specimen as defined in [346.12e](#).
- d. *Exempt human or animal specimen* means a human or animal sample (including, but not limited to, secret, excreta, blood and its components, tissue and tissue fluids, and body parts) transported for routine testing not related to the diagnosis of an infectious disease. Typically, exempt human specimens are specimens for which there is a low probability that the sample is infectious, such as specimens for drug or alcohol testing; cholesterol testing; blood glucose level testing; prostate-specific antigens (PSA) testing; testing to monitor heart, kidney, or liver function; pregnancy testing; and testing for diagnosis of noninfectious diseases such as cancer biopsies. Exempt human or animal specimens are not subject to regulation as hazardous materials but must be packaged according to [346.326](#).
- e. *Patient specimen* means material that is collected directly from humans or animals and transported for purposes such as diagnosis and research. Patient specimens include excreta, secret, blood and its components, tissue and tissue swabs, body parts, and specimens in transport media (such as transwabs, culture media, and blood culture bottles).

- f. *Regulated medical waste*, for USPS purposes, means a soft waste material (other than a sharp) derived from the medical treatment, diagnosis, immunization, or biomedical research of a human or animal. Soft medical waste includes items such as used rubber gloves, swabs, gauze, tongue depressors, and other similar material. Mark these mailpieces with identification number UN3291.
- g. *Sharps medical waste*, for USPS purposes, means a medical waste object that is capable of cutting or penetrating skin or packaging material and that is contaminated with a pathogen or may become contaminated with a pathogen derived from the medical treatment, diagnosis, immunization, or biomedical research of a human or animal. Sharps include used medical waste such as needles, syringes, scalpels, broken glass, culture slides, culture dishes, broken capillary tubes, broken rigid plastic, and exposed ends of dental wires. Mark these mailpieces with identification number UN3291.
- h. *Toxin* means a Division 6.1 material from a plant, animal, or bacterial source. A toxin containing an infectious substance or a toxin contained in an infectious substance must be classed as Division 6.2, described as an infectious substance, and assigned to UN2814, UN2900, or UN3373, as appropriate. A toxin known or suspected to contain a Category A infectious substance is nonmailable. A toxin known or suspected to contain a Category B infectious substance must be marked UN3373 and packaged under [346.321](#). Toxins from plant, animal, or bacterial sources that do not contain an infectious substance and are not contained in an infectious substance may be considered for classification as Division 6.1 toxic substances under [346](#).
- i. *Used health care product* means a medical, diagnostic, or research device or piece of equipment, or a personal care product used by consumers, medical professionals, or pharmaceutical providers, that does not meet the definition of a diagnostic specimen, biological product, regulated medical waste, or sharps waste, is contaminated with potentially infectious body fluids or materials, and is not decontaminated or disinfected to remove or mitigate the infectious hazard prior to transport.

346.2 Mailability

346.21 General

346.211 Division 6.1, Toxic Substances

The following conditions apply:

- a. *International Mail*. Division 6.1 toxic substances or poisons and irritating materials are prohibited.
- b. *Domestic Mail via Air or Surface Transportation*. A Division 6.1 toxic substance or poison that can qualify as a consumer commodity material or ORM-D (for surface only) is permitted when packaged under the applicable requirements in Appendix [C](#) (Packaging Instruction 6A). Certain other poisonous materials are permitted to be mailed only between authorized parties under specific conditions as specified in [346.231b](#).

346.212 Division 6.2, Infectious Substances

- a. *International Mail*. Category A infectious substances are nonmailable. A material that is classified as a Category B infectious substance and that meets the definition in [346.12a2](#) is permitted in international mail only when sent by First-Class Package International Service or

the Priority Mail International Small Flat Rate Priced Boxes using Registered Mail service; when intended for medical or veterinary use, research, or laboratory certification related to the public health; and when materials are properly prepared for mailing. The mailer must receive written approval from the USPS manager, Product Classification (see [214](#) for address). See Chapter 6 and IMM 135 for specific requirements.

- b. *Domestic Mail*. Infectious substances are permitted only when they are intended for medical or veterinary use, research, or laboratory certification related to public health, and when properly prepared for mailing to withstand shocks, pressure changes, and other conditions incident to ordinary handling in transit. The following substances are mailable subject to the corresponding packaging requirements:
 - 1. Category B infectious substance via First-Class Mail, Priority Mail, or Priority Mail Express service.
 - 2. Sharps and other mailable regulated medical waste via First-Class Mail or Priority Mail service using merchandise return service.
 - 3. Used health care products via First-Class Mail, Priority Mail, or Priority Mail Express service.
 - 4. Forensic materials via First-Class Mail, Priority Mail, or Priority Mail Express service.
 - 5. Nonregulated materials via First-Class Mail, Priority Mail, Priority Mail Express, or Package Services.
 - 6. Exempt human or animal specimens via First-Class Mail, Priority Mail, Priority Mail Express, or Package Services.

346.22 Nonmailable Class 6 Materials

When hazardous materials that are nonmailable under [346.2](#) are found in the mailstream, the procedures in POM 139.117 must be followed if the materials present an immediate threat to persons or property. The procedures in POM 139.118 are followed when there is no immediate threat to persons or property.

346.221 Division 6.1, Toxic Substances

The following Division 6.1 materials are nonmailable:

- a. *Toxic Substances*. Any toxic material having an LD₅₀ for oral toxicity of 50 mg/kg or less is nonmailable, except when sent between authorized parties under the conditions permitted in [346.231b](#). Examples of nonmailable toxic materials include, but are not limited to, the following:
 - 1. Aniline oil (UN1547).
 - 2. Bromoacetone (UN1569).
 - 3. 3-Chloro-4-methylphenyl isocyanate (UN2236).
 - 4. Chloropicrin (UN1580).
 - 5. Cyanogen bromide (UN1889).
 - 6. Hexaethyl tetraphosphate, liquid or solid (UN1611).
 - 7. Hydrocyanic acid aqueous solutions (UN1613).
 - 8. Methyl bromide (UN1062).
 - 9. Methyl parathion, liquid (NA3018).
 - 10. Motor fuel antiknock mixtures (UN1649).
 - 11. Organic phosphate compound (NA1955).

12. Parathion (NA1967).
 13. Phenylcarbylamine chloride (UN1672).
 14. Tetraethyl dithiopyrophosphate (UN1704).
 15. Tetraethyl lead, liquid (NA1649).
 16. Tetraethyl pyrophosphate, liquid (NA3018).
 17. Thiophosgene (UN2474).
- b. *Irritating Materials.* All irritating materials are nonmailable. Examples include the following:
1. Bromobenzyl cyanide (UN1694).
 2. Chloroacetophenone (UN1697).
 3. Diphenylamine chloroarsine (UN1698).
 4. Diphenylchloroarsine (UN1699).
 5. Tear gas (UN1700, NA1693, and UN1693), except for those containing oleoresin capsicum.

346.222 Division 6.2, Infectious Substances

The following Division 6.2 materials are nonmailable:

- a. Blood collected for the purpose of blood transfusion known or suspected to contain a Category A infectious substance.
- b. A biological product, culture, stock, or other biological specimen known or suspected to contain a Category A infectious substance. Mailpieces that exceed 4 liters (1 gallon) for liquids or 4 kg. (8.8 pounds) for solids are nonmailable.
- c. A toxin known or suspected to contain a Category A infectious substance.
- d. Sharps medical waste and regulated medical waste that contain a Category A infectious substance.
- e. Used healthcare products that contain a Category A infectious substance.

346.23 Mailable Class 6 Materials

In addition to the mailable types of Division 6.1 and 6.2 materials cited in [346.21](#), the following materials are permitted to be mailed only within the conditions noted.

346.231 Division 6.1, Toxic Substances

- a. *Consumer Commodity or ORM-D Materials.* A Division 6.1 toxic substance that can qualify as a consumer commodity material or ORM-D material (for surface only) is mailable when all applicable conditions are met.
- b. *Toxic Substances with LD₅₀ Oral Toxicity of 50 mg/kg or Less.* A Division 6.1 toxic substance having an LD₅₀ for oral toxicity of greater than 5 mg/kg but less than or equal to 50 mg/kg is mailable only when sent between the following authorized parties and under the specified conditions:
 1. Toxic substances for scientific use (not outwardly or of their own force dangerous or injurious to life, health, or property) may be sent only between manufacturers, dealers, bona fide research or experimental scientific laboratories, and employees of federal, state, or local governments who have official use for such poisons and are designated by the agency head to receive or send such poisons. For domestic air transportation, a shipping paper is required.

2. Poisonous drugs and medicines may be sent only from the manufacturer or dealer of the drugs and medicines to licensed physicians, surgeons, dentists, pharmacists, druggists, cosmetologists, barbers, and veterinarians (18 U.S.C. 1716). In limited circumstances, when the mailing is initiated by a drug manufacturer or the manufacturer's registered agent, customers may return prescription drugs to the manufacturer or its registered agent as indicated in [453.36](#).

346.232 Other Nonregulated Toxic Materials

Liquids and solids such as pesticides, insecticides, and herbicides that are not regulated as hazardous materials under 49 CFR are mailable subject to Postal Service quantity restrictions that are based on the toxicity of the material.

- a. *Liquids*. Restrictions are as follows, subject to the general packaging requirements of 451.3a and DMM 601.3.4:
 1. A nonregulated toxic liquid having an LD₅₀ of 300 to 500 mg/kg is permitted in an aggregate quantity of 16 fluid ounces per mailpiece.
 2. A nonregulated toxic liquid having an LD₅₀ of 500 to 2,500 mg/kg is permitted in an aggregate quantity of 32 fluid ounces in glass or other breakable primary receptacles, or in an aggregate quantity of up to 1 gallon in non-breakable primary receptacles.
 3. A nonregulated toxic liquid having an LD₅₀ of 2,500 to 5,000 mg/kg is permitted in an aggregate quantity of 1 gallon in glass or other breakable primary receptacles, or in an aggregate quantity of up to 2 gallons in non-breakable primary receptacles.
 4. A nonregulated toxic liquid having an LD₅₀ of greater than 5,000 mg/kg is permitted with no quantity restriction.
 5. External markings specifying the contents and shipping papers are not required for nonregulated toxic liquids. Primary receptacles containing nonregulated toxic liquids having an LD₅₀ of 5000 mg/kg or less must be triple packaged (as specified in 451.3a and DMM 601.3.4) when the aggregate quantity of liquid exceeds 4 ounces in a single mailpiece.
- b. *Solids*. Restrictions are as follows:
 1. A nonregulated toxic solid for which an LD₅₀ rate equivalent to liquids can be established is mailable under the same quantity restrictions for Division 6.1 toxic substances specified in Packaging Instruction 6A in Appendix [C](#).
 2. Packaging requirements for a nonregulated toxic solid are the same as those for Division 6.1 toxic substance (see Packaging Instruction 6A in Appendix [C](#)), except that a single mailpiece may contain an aggregate quantity of up to 5 pounds.
 3. External markings specifying the contents and shipping papers are not required for nonregulated toxic solids.

346.233 Division 6.2, Infectious Substances

Infectious substances, biological products, cultures and stocks, exempt human or animal specimens, patient specimens, regulated medical waste, sharps medical waste, toxins, and used health care

products are permitted to be mailed within specific quantity limits and packaging conditions specified in [346.3](#).

346.234 Nonregulated Materials

The following materials are not subject to regulation as Division 6.2 hazardous materials and are mailable when the packaging requirements specified in Packaging Instruction 6G in Appendix [C](#) are met:

- a. A biological product, including an experimental or investigational product or component of a product, subject to federal approval, permit, review, or licensing requirements, such as those required by the Food and Drug Administration of the U.S. Department of Health and Human Services or the U.S. Department of Agriculture. A biological product known or suspected to contain a Category B infectious substance must be marked UN3373 (as shown in [Exhibit 346.12a2](#)) and packaged under [346.321](#). A biological product known or suspected to contain a Category A infectious substance is nonmailable.
- b. Blood collected for the purpose of blood transfusion or the preparation of blood products; blood products; plasma; plasma derivatives; blood components; tissues or organs intended for use in transplant operations; and human cell, tissue, and cellular and tissue-based products regulated under the Public Health Service Act (42 U.S.C. 264-272) or the Food, Drug, and Cosmetic Act (21 U.S.C. 332 et seq.).
- c. Blood, blood plasma, and blood components collected for the purpose of blood transfusion or the preparation of blood products and sent for testing as part of the collection process, except when the person collecting the blood has reason to believe it contains a Category B infectious substance, in which case the test sample must be shipped as a Category B infectious substance. Materials known or suspected to contain a Category A infectious substance are nonmailable.
- d. Dried blood spots, collected by applying a drop of blood to absorbent material, or dried specimens for fecal occult blood detection. (These materials are not classified as exempt human or animal specimens.)
- e. Forensic material containing a biological material, such as tissue, body fluid, excreta, or secreta, not expected to contain a Category A or Category B infectious substance and transported on behalf of a federal, state, local, or Indian tribal government agency. A forensic material known or suspected to contain a Category B infectious substance must be shipped as a Category B infectious substance. A forensic material known or suspected to contain a Category A infectious substance is nonmailable.

346.3 Packaging, Marking, Labeling, and Documentation

346.31 Division 6.1, Toxic Substances

Mailable toxic substances must be prepared as follows:

- a. *Consumer Commodity or ORM-D Materials*. In all cases, the applicable requirements specified in [346.211](#) and [346.231](#) must be met. Packaging Instruction 6A in Appendix [C](#) must be followed.
- b. Toxic Substances with LD₅₀ Oral Toxicity of 50 mg/kg or Less. The applicable requirements specified in [346.211](#) and [346.231](#) must be met. Packaging Instruction 6B in Appendix [C](#) must

be followed. Each mailpiece must be plainly and durably marked on the address side with the proper shipping name and UN number of the material (unless exempted by [453.4](#)).

- c. *For air transportation*, parcels containing mailable Class 6 materials must bear the DOT square-on-point marking. The top and bottom portions of the square-on-point and the border forming the square-on-point must be black, and the center must be white or of a suitable contrasting background. The symbol “Y” must be black, located in the center of the square-on-point, and clearly visible. Mailpieces must also be marked with the proper shipping name “Consumer Commodity” and identification number “ID8000.” Each mailpiece must also bear an approved DOT Class 9 hazardous material warning label (see [Exhibit 325.2b](#)). A properly completed shipper’s declaration for dangerous goods prepared in triplicate must be affixed to the outside of the mailpiece.
- d. *For surface transportation*, parcels must be plainly and durably marked on the address side with “Surface Only” or “Surface Mail Only” and “ORM-D,” immediately following or below the proper shipping name (e.g., Consumer Commodity). Optionally, mailpieces may be marked with an approved DOT limited quantity square-on-point marking (see [Exhibit 325.2a](#)). The top and bottom portions of the square-on-point and the border forming the square-on-point must be black, and the center must be white or of a suitable contrasting background. Surface shipments containing qualifying ORM-D material bearing the square-on-point limited quantity marking are not required to be marked with the shipping name and identification number. Each mailpiece must bear a shipping paper.
- e. When the DOT square-on-point markings are used, markings must be durable, legible, and readily visible, and must be applied on at least one side or one end of the outer packaging. The border forming the square-on-point must be at least 2 mm in width, and the minimum dimension of each side must be 100 mm, unless the package size requires a reduced size marking of no less than 50 mm on each side.

346.32 Division 6.2, Infectious Substances

The proper packaging, marking, labeling, and documentation for mailable Division 6.2 materials are described in the following sections.

346.321 Category B Infectious Substances

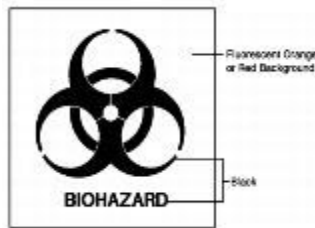
Note: See Packaging Instruction 6C in Appendix [C](#).

Regulated medical waste and sharps medical waste known or suspected to contain a Category A infectious substance is not mailable. A material that is classified as a Category B infectious substance and that meets the definition in [346.12a2](#) must be triple-packaged, meeting the packaging requirements in 49 CFR 173.199, and sent with First-Class Mail, Priority Mail, or Priority Mail Express service. Each primary receptacle containing a liquid must be leakproof and surrounded by absorbent material sufficient to protect the primary receptacle and absorb the total amount of liquid should the primary receptacle leak or break. Each primary receptacle containing a solid must be siftproof. Secondary containers for liquids must be leakproof. Secondary containers for solids must be siftproof. The primary and secondary packaging must be enclosed in a rigid outer shipping container. A single primary receptacle must not contain more than 1 liter (34 ounces) of a liquid specimen or 4 kg (8.8 pounds) of a solid specimen. Two or more primary receptacles whose combined volume does not exceed 4 liters (1 gallon) for liquids or 4 kg (8.8 pounds) for solids may be enclosed in a single secondary container. In addition:

- a. The secondary container must be marked with the international biohazard symbol shown in [Exhibit 346.321](#).
- b. The primary receptacle or secondary packaging must be capable of withstanding, without leakage, an internal pressure producing a pressure differential of not less than 95 kPa (0.95 bar, 14 psi) in the range of -40°F to 130°F (-40°C to 55°C).
- c. All mailpieces sent under 346.321 must be marked on the address side with the shipping name “Biological Substance, Category B” and “UN3373” (as shown in [Exhibit 346.12a2](#)) and as outlined in 49 CFR 173.199(a)(5). Regulated medical waste and sharps medical waste as defined in [346.12f](#) and [346.12g](#) must be marked UN3291. See [346.322](#).
- d. Orientation arrows are not required on these mailpieces but may be used.
- e. The outer packaging must show the name and telephone number of a person who is knowledgeable about the material shipped and has comprehensive emergency response and incident mitigation information, or of someone who has immediate access to the person with such knowledge and information.

Exhibit 346.321

International Biohazard Symbol



346.322 Sharps Waste and Other Mailable Regulated Medical Waste

Note: See Packaging Instructions 6D in Appendix [C](#).

Regulated medical waste and sharps medical waste known or suspected to contain a Category A infectious substance is not mailable. Regulated medical waste and sharps medical waste as defined in [346.12f](#) and [346.12g](#) and containing materials classified as Category B infectious substances must be marked UN3291 and are permitted for mailing only using merchandise return service (see DMM 505.3) with First-Class Mail or Priority Mail service, subject to the following requirements:

- a. **Authorization.** Each vendor of a complete regulated medical waste or sharps waste mailing container system (including all component parts required to safely mail such waste to a storage or disposal facility) must obtain authorization from the Postal Service prior to mailing. Before applying for authorization, each type of mailing container system must be tested and certified under the standards in [346.322d](#) by an independent testing facility. The vendor in whose name the authorization is being sought must submit a written request to the manager of Product Classification at Postal Service Headquarters (see 214 for address). The request for authorization must contain the following:
 1. An irrevocable \$50,000 surety bond or letter of credit as proof of sufficient financial responsibility to cover disposal costs if the vendor ceases doing business before all its waste container systems are disposed of or to cover cleanup costs if spills occur while the containers are in Postal Service possession. The surety bond or letter of credit must be issued in the name of the vendor seeking the authorization and must

name the Postal Service as the beneficiary or obligee. Vendors that market their containers to distributors are responsible for disposal and cleanup costs attributed to those containers. In addition, vendors must provide a list of distributors, including firm names, addresses, and telephone numbers, to the Postal Service on request.

2. Address of the headquarters or general business office of the vendor seeking the authorization.
 3. Name, address, and phone number of each storage and disposal site.
 4. List of all types of mailing container systems to be covered by the request, a complete sample of each mailing container system, and proof of package testing certifications performed by the independent testing facility that subjected the packaging materials to the testing requirements in [346.322d](#).
 5. Copy of the proposed waste shipping paper to be used with each mailing container system.
 6. 24-hour toll-free telephone number for emergencies.
 7. List of the types of waste to be mailed for disposal in each mailing container system.
 8. Copy of the merchandise return service label to be used with each mailing container system and verification that the merchandise return service permit fee and accounting fee have been paid.
 9. Address of the Post Office or postage-due unit where the containers are delivered.
- b. *Packaging.* Regulated medical waste and sharps medical waste that also meet the definition of a Category A infectious substance are nonmailable, except for medical professional packages identified in [346.322b7](#), which may not weigh more than 35 pounds. A medical waste material treated by steam sterilization, chemical disinfections, or other appropriate method so that it no longer contains a Category A or Category B infectious substance must be packaged under [346.325](#). The packaging for regulated medical waste and sharps medical waste containing or suspected of containing a Category B infectious substance is subject to the following standards:
1. Regulated medical waste and sharps medical waste meeting the definitions in [346.12f](#) and [346.12g](#) must be collected in a rigid, securely sealed, and leakproof primary receptacle. For sharps waste, the primary receptacle must also be puncture-resistant and may not have a maximum capacity that exceeds 3 gallons in volume. For regulated medical waste, the primary receptacle may not have a maximum capacity that exceeds 5 gallons in volume. Each primary receptacle may not contain more than 50 ml (1.66 ounces) of residual waste liquid. Each primary receptacle must display the international biohazard symbol shown in [Exhibit 346.321](#). Package testing results must show that the contents did not penetrate through the primary container during package testing and that the primary container can maintain its integrity at temperatures as low as 0°F and as high as 120°F (–18°C to 49°C).
 2. The primary receptacle must be packaged within a watertight secondary container or containment system. The secondary container may consist of more than one component. If one of the components is a plastic bag, the bag must be at least 4 mil in thickness and must be used in conjunction with a fiberboard box. A plastic bag by

itself does not meet the requirement for a secondary container. Several primary receptacles may be enclosed in a secondary container. The primary receptacle(s) must fit securely and snugly within the secondary container to prevent breakage during ordinary processing.

3. The secondary container must be enclosed in a strong outer shipping container constructed of 200-pound grade corrugated fiberboard. The joints and flaps of the outer shipping container must be securely taped, glued, or stitched to maintain the integrity of the container. When tape or glue is used to secure an outer shipping container, the material must be water-resistant. Fiberboard boxes with interlock bottom flaps (i.e., easy-fold) are not permitted as outer shipping containers unless reinforced with water-resistant tape. The secondary container must fit securely and snugly within the outer shipping container to prevent breakage during ordinary processing.
4. There must be enough material within the primary receptacle to absorb and retain three times the total liquid allowed within the primary receptacle (150 ml per primary receptacle) in case of leakage.
5. Each mailpiece must not weigh more than 25 pounds. Medical Professional Packages, as identified in [346.322b7](#), may not weigh more than 35 pounds. The container's maximum allowable weight must be printed on the outside of the box and on the assembly and closure instructions included with each mailpiece. The mailpiece must be tested at the maximum allowable weight identified by the vendor.
6. In each mailing container system, the authorized vendor must include a step-by-step instruction sheet that clearly details the proper sequence and method of container system assembly prior to mailing to prevent package failure during transport due to improper assembly. The instruction sheet must also include a customer service telephone number, or provide specific information on where such a telephone number is located elsewhere on the container system, for third-party end users to contact if they have assembly questions or find a component part is missing.
7. Medical professional packages are intended for use by small medical offices, but they are not limited to use by medical offices only. One primary receptacle larger than 5 gallons in volume may be used for mailing pre-primary sharps receptacles (sharps receptacles normally used in doctors' offices) and other regulated medical waste under the following conditions:
 - a. The mailpiece must meet all the requirements in [346.32](#) except for the primary receptacle capacity limits of [346.322b1](#).
 - b. Only rigid, securely closed, puncture- and leak-resistant pre-primary sharps receptacles that meet or exceed Occupational Safety and Health Administration (OSHA) standards as identified in 29 CFR 1910.1030 may be placed inside the primary receptacle. Each pre-primary sharps container may contain no more than 50 ml (1.66 ounces) of residual waste liquid. Several pre-primary sharps receptacles may be enclosed in the single primary receptacle.
 - c. Multiple tie-closed plastic bags of regulated medical waste may be placed inside the single primary receptacle.

- d. The primary receptacle must be lined with a plastic bag at least 4 mil in thickness and must include sufficient absorbent material within the liner to absorb all residual liquid in the primary receptacle.
 - e. The mailpiece must not weigh more than 35 pounds.
- c. *Mailpiece Labeling, Marking, and Documentation.* Regulated medical waste and sharps waste must meet the following requirements:
1. Each primary receptacle and outer shipping container must bear a label, which cannot be detached intact, showing the following:
 - a. The company name of the vendor to which the mailing authorization is issued.
 - b. The USPS Authorization Number.
 - c. The container ID number (or unique model number) signifying that the packaging material is certified and that the vendor obtained the authorization required by [346.322a](#).
 2. Place the label on the top or on a side of the container. The primary receptacle(s) and the outer shipping container must bear the international biohazard symbol in black with either a fluorescent orange or fluorescent red background as shown in [Exhibit 346.321](#). The symbol on the outer shipping container must be at least 3 inches high and 4 inches wide.
 3. Each mailpiece must have a four-part waste shipping paper. The shipping paper must be affixed to the outside of the mailpiece in an envelope or similar carrier that can be easily opened and resealed to allow review of the document. The shipping paper must comply with all applicable requirements imposed by the laws of the state from which the container system is mailed. At a minimum, the information in [Exhibit 346.322c3](#) must be on the shipping paper.
 4. The outer shipping container must bear a properly prepared merchandise return service label (see DMM 505.3). The merchandise return service permit must be held in the same name as that of the authorized medical waste vendor.
 5. The outer shipping container must be marked on two opposite side walls with the package orientation marking in 49 CFR 173.312 to identify the proper upright position of the mailpiece during handling.
 6. Mailpieces containing regulated medical waste or sharps waste must be marked on the address side with the correct UN number and proper shipping name (e.g., “Regulated Medical Waste, UN3291” or “Regulated Medical Waste-Sharps, UN3291”).
 7. Vendors must retrieve mailpieces held at processing facilities due to improper labeling, such as no return address, or due to improperly completed shipping papers.
 8. For medical professional packages, the additional marking “Medical Professional Packaging” must be clearly printed in lettering at least 2 inches high on the address side of the outer shipping container.

d.

Section	Information Required
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<p>1. Generator (Mailer)</p>	<p>a. Name.</p> <p>b. Complete address (not a Post Office box).</p> <p>c. Telephone number.</p> <p>d. Description of contents of mailing container. "Regulated Medical Waste" or "Regulated Medical Waste-Sharps" is required as appropriate.</p> <p>e. Date container was mailed.</p> <p>f. State permit number of approved facility in which contents are to be disposed of.</p>
<p>2. Destination Facility (Disposal Site)</p>	<p>Complete address (not a Post Office box).</p>
<p>3. Generator's (Mailer's) Certification</p>	<p>The following certification statement must be printed on the shipping paper:</p> <p>"I certify that this container has been approved for the mailing of [insert either</p> <p>"regulated medical waste" or "sharps waste," as appropriate], has been</p> <p>prepared for mailing in accordance with the directions for that purpose, and</p> <p>does not contain excess liquid or nonmailable material in violation of the applicable Postal Service regulations. I AM AWARE THAT FULL RESPONSIBILITY RESTS WITH THE GENERATOR (MAILER) FOR ANY VIOLATION OF 18 U.S.C. 1716 WHICH MAY RESULT FROM PLACING IMPROPERLY PACKAGED ITEMS IN THE MAIL. I also certify that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and in proper condition for carriage by air according to the national governmental regulations."</p> <p>This statement must be followed by printed or typewritten name of generator (mailer), signature of generator, and date signed.</p>

<p>4. Destination Facility (Storage or Disposal Site)</p>	<p>The following certification statement of receipt, treatment, and disposal must be printed on the shipping paper:</p> <p>“I certify that the contents of this container have been received, treated, and</p> <p>disposed of in accordance with all local, state, and federal regulations.”</p> <p>This statement must be followed by printed or typewritten name of an authorized recipient at destination facility, signature of authorized recipient, and date signed.</p>
<p>5. Transporter Intermediate Handler Other Than the Postal Service (If Different From Destination Facility)</p>	<p>a. Name.</p> <p>b. Complete address (not a Post Office box).</p> <p>c. Printed or typewritten name of transporter or intermediate handler.</p> <p>d. Signature of transporter or intermediate handler and date signed.</p>
<p>6. Serialized Waste Shipping Papers</p>	<p>Each waste shipping paper or mail disposal service shipping record must be serialized using a unique numbering system for identification purposes.</p>
<p>7. Comment Area</p>	<p>Each shipping paper must contain an area designated for entering comments or noting discrepancies.</p>
<p>8. Completion and Distribution of Waste Shipping Paper</p>	<p>Each shipping paper must contain instructions for properly completing the four-part form. Copies of the form must be distributed as follows:</p> <p>a. One copy must be kept by generator (mailer).</p> <p>b. One copy must be kept by transporter or intermediate handler for 90 days.</p> <p>c. One copy must be kept by destination facility for 90 days.</p> <p>d. One copy must be mailed to generator by destination facility.</p>

<p>9. Emergency Telephone Number</p>	<p>Each shipping paper must bear the following statement with appropriate information:</p> <p>“IN CASE OF EMERGENCY, OR THE DISCOVERY OF DAMAGE OR LEAKAGE,</p> <p>CALL 1-800-###-####.”</p>
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- e. *Package Testing.* Vendors must submit to the manager, Product Classification (see [214](#) for address) package testing results from an independent testing facility for each package for which the vendor is requesting authorization. In addition, vendors must submit package testing results from an independent testing facility when the design of a container system changes or every 24 months, whichever occurs first. The test results must show that, if every mailpiece prepared for mailing were subject to the environmental and test conditions in 49 CFR and the additional test requirements in [346.322e](#), no contents would be released into the environment and the effectiveness of the packaging would not be significantly reduced. The Postal Service may require proof of accreditation or other documentation to support the credentials of an independent testing facility.
- f. Packages tested for approval as medical professional packages may not be tested using pre-primary containers that are currently or have previously been approved as Postal Service primary containers. In addition, test reports must identify by brand name the pre-primary containers that were used during testing.
- g. *Testing Criteria.* Each mailpiece must pass each of the tests described below:
 1. *Leakproof Test.* The test must be conducted on one primary receptacle with the lid in place, without the secondary and outer packaging. The test duration must be at least 5 minutes and must be conducted at 20 kPa (3 psi). The pass/fail criterion is as follows: no air leakage from anywhere other than the closure of the primary receptacle. Air leakage at the closure is not considered a failure if the primary receptacle passes the test for watertightness as determined by placing 50 ml of deionized water into the primary receptacle, securing the closure, and then turning the container on its side and observing for any evidence of leakage. Any evidence of water leaking from the primary receptacle is a failure.
 2. *Stacking Test.* One mailpiece must withstand the test in 49 CFR 178.606. The dynamic compression test must be conducted on the empty, unsealed mailpiece assembled for mailing, without the primary receptacle(s). The test mass is the vendor-identified maximum weight, not to exceed 25 pounds, as indicated on the outer shipping container and on the assembly and closing instructions. A compensation factor of 1.5 must be used to compute the test load, based on the vendor-identified weight. The pass/fail criteria are as follows: no buckling of the sidewalls sufficient to cause damage to the contents in the primary receptacle, and in no case does the deflection exceed 1 inch.
 3. *Vibration Test.* One mailpiece filled with sharps or other regulated medical waste must withstand the test in 49 CFR 178.608. The test mailpiece is filled with sharps or other regulated medical waste to the vendor-identified maximum weight, not to exceed 25 pounds, as indicated on the outer shipping container and on the assembly and closing instructions. The test sample is prepared as it would be for mailing. The

pass/fail criterion is as follows: no rupture, cracking, or splitting of any primary receptacle.

4. *Wet Drop Test.* Five mailpieces filled with sharps or other regulated medical waste must withstand the test in 49 CFR 178.609e. Each test mailpiece is filled with sharps or other regulated medical waste to the vendor-identified maximum weight, not to exceed 25 pounds, as indicated on the outer shipping container and on the assembly and closing instructions included with each mailpiece. Each mailpiece is prepared as it would be for mailing and subjected to a water spray as described in the test. A separate, untested mailpiece is used for each drop orientation: top, longest side, shortest side, and corner. The pass/fail criteria are as follows: no rupture, cracking, or splitting of any primary receptacle, and no contents may penetrate into or through the body or lid of any primary receptacle.
5. *Cold Drop Test.* Five mailpieces filled with sharps or other regulated medical waste must withstand the test in 49 CFR 178.609f. Each test mailpiece is filled with sharps or other regulated medical waste to the vendor-identified maximum weight, not to exceed 25 pounds, as indicated on the outer shipping container and on the assembly and closing instructions included with each mailpiece. Each mailpiece is prepared as it would be for mailing and chilled as described in the test. A separate, untested mailpiece is used for each drop orientation: top, longest side, shortest side, and corner. The pass/fail criteria are as follows: no rupture, cracking, or splitting of any primary receptacle, and no contents may penetrate into or through the body or lid of any primary receptacle.
6. *Impact Test.* One mailpiece filled with sharps or other regulated medical waste must withstand the test in 49 CFR 178.609h. The test mailpiece is filled with sharps or other regulated medical waste to the vendor-identified maximum weight, not to exceed 25 pounds, as indicated on the outer shipping container and on the assembly and closing instructions included with each mailpiece. The mailpiece is prepared as it would be for mailing. The pass/fail criteria are as follows: no rupture, cracking, or splitting of any primary receptacle, and no contents may penetrate into or through the body or lid of any primary receptacle.
7. *Puncture-Resistant Test.* Package testing results must show that, during all of the previous tests, the contents did not penetrate through the primary receptacle.
8. *Temperature Test.* Package testing results must show that each primary receptacle maintained its integrity when exposed to temperatures as low as 0°F and as high as 120°F (–18°C to 49°C).
9. *Absorbency Test.* Package testing results must show that the primary receptacle(s) contain enough absorbent material to absorb three times the total liquid allowed within the primary receptacle in case of leakage. Absorbency is determined by pouring 150 ml of deionized water into the primary receptacle(s), then turning the receptacle(s) upside down and observing for any evidence of free liquid not absorbed on contact. Any evidence of free liquid is a failure.
10. *Watertight Test.* Package testing results must show that no leakage occurred when 50 ml of deionized water was placed into the secondary containment system and the entire system was turned upside down for 5 minutes.

- h. *Suspension of Authorization.* The Postal Service may suspend a vendor's authorization based on information that a mailpiece no longer meets the standards for mailing sharps medical waste and regulated medical waste containers, or that the mailpiece poses an unreasonable safety risk to Postal Service employees or the public. The suspension can be made immediately, making the mailpiece nonmailable immediately. The vendor may contest a decision to suspend authorization by writing to the manager, Product Classification (see [214](#) for address) within 7 days from the date of the letter of suspension. The appeal should provide evidence demonstrating why the decision should be reconsidered. Any order suspending authorization remains in effect during an appeal or other challenge. When a vendor is notified that its authorization to mail sharps or other regulated medical waste containers has been suspended, the vendor must immediately do the following:
1. Recall all identified containers.
 2. Notify all customers that they cannot mail the identified containers.
 3. Suspend sales and distribution of all identified containers.
 4. Collect the identified containers from distributors, consumers, and the Postal Service without using the mail and in accordance with all federal and state regulations.

346.323 Used Health Care Products

Note: See Packaging Instruction 6E in Appendix [C](#).

A used health care product known or reasonably suspected to contain a Category A material is nonmailable. A used health care product not suspected to contain an infectious material, or that is known or suspected to contain a Category B infectious substance and is being returned to the manufacturer or manufacturer's designee is mailable with First-Class Mail, Priority Mail, or Priority Mail Express service subject to the following packaging requirements:

- a. Each used health care product must be drained of liquid to the extent possible and placed in a watertight primary receptacle designed and constructed to ensure that it remains intact under normal conditions of transport. For a used health care product capable of cutting or penetrating skin or packaging material, the primary receptacle must be capable of retaining the product without puncture of the packaging under normal conditions of transport. The primary receptacle must be marked with the international biohazard symbol shown in [Exhibit 346.321](#).
- b. Each primary receptacle must be placed inside a watertight secondary container designed and constructed to ensure that it remains intact under normal conditions of transport. The secondary container must also be marked with the international biohazard symbol shown in [Exhibit 346.321](#).
- c. The secondary container must be placed inside an outer shipping container with sufficient cushioning material to prevent movement between the secondary container and the outer shipping container. An itemized list of the contents of the primary receptacle and information concerning possible contamination with a Division 6.2 material, including its possible location on the product, must be placed between the secondary container and the outer shipping container. A shipping paper and a content marking on the outer shipping container are not required.

346.324 Forensic Material in Category B

Note: See Packaging Instruction 6F in Appendix [C](#).

Forensic material containing a biological material, such as tissue, body fluid, excreta, or secreta, and sent on behalf of a federal, state, local, or Indian tribal government agency must be packaged under [346.325](#) when it is not known or suspected to contain a Category A or Category B infectious substance. Forensic material known or suspected to contain a Category A infectious substance is nonmailable. Forensic material known or suspected to contain a Category B infectious substance as identified in [346.321](#) is mailable with First-Class Mail, Priority Mail, or Priority Mail Express service when triple-packaged in a primary receptacle, secondary container, and a rigid outer shipping container as follows:

- a. The forensic material must be held within a securely sealed primary receptacle. The primary receptacle must be surrounded by sufficient absorbent material (for liquids) and cushioning material to protect the primary container from breakage. The absorbent material must be capable of taking up the entire liquid contents of the primary receptacle in case of leakage. The primary receptacle must be marked with the international biohazard symbol shown in [Exhibit 346.321](#).
- b. The primary receptacle and the absorbent and cushioning material must be enclosed in a watertight and securely sealed secondary container. The secondary container must also display the international biohazard symbol shown in [Exhibit 346.321](#).
- c. The secondary container must be firmly and snugly packed within a strong outer shipping container that is securely sealed. A shipping paper and a content marking on the outer shipping container are not required.

346.325 Nonregulated Materials

Note: See Packaging Instruction 6G in Appendix [C](#).

Nonregulated materials as defined in [346.234](#) are not subject to regulation as hazardous materials but must be properly packaged when presented for mailing. Regulated medical waste and sharps medical waste must be packaged and mailed under [346.322](#), and used health care products must be packaged and mailed under [346.323](#). Exempt human and animal specimens must be packaged under [346.326](#). Nonregulated materials are mailable as Priority Mail Express, Priority Mail, First-Class Mail, First-Class Package Service, Parcel Select, or USPS Retail Ground. Such materials must be held within a securely sealed primary receptacle. The primary receptacle must be surrounded by sufficient absorbent material (for liquids) and cushioning material to protect the primary receptacle from breakage. The absorbent material must be capable of taking up the entire liquid contents of the primary receptacle in case of leakage. Either the primary receptacle or the inner packaging must be marked with the international biohazard symbol shown in [Exhibit 346.321](#). The primary receptacle and the absorbent and cushioning material must be snugly enclosed in a rigid outer shipping container that is securely sealed. A shipping paper and a content marking on the outer shipping container are not required. Nonregulated material specimens and biological products are subject to the following packaging standards:

- a. *Liquid Patient Specimens and Biological Products.* Mailers must package a liquid nonregulated patient specimen, a forensic specimen, or a biological product (such as polio vaccine) as follows:
 1. *Not exceeding 50 ml.* A patient specimen or biological product consisting of 50 ml or less per mailpiece must be packaged in a securely sealed primary receptacle. Two or more primary receptacles whose combined volume does not exceed 50 ml may be

enclosed within a single mailpiece. Sufficient absorbent material and cushioning material to withstand shock and pressure changes must surround the primary receptacle(s), or be otherwise configured to take up the entire liquid contents in case of leakage. The primary receptacle(s) and the absorbent cushioning must be enclosed in a secondary container with a leakproof barrier that can prevent failure of the secondary container if the primary receptacle(s) should leak during transport. The secondary container must be securely sealed, and it may serve as the outer shipping container if it has sufficient strength to withstand ordinary postal processing. The secondary container must be marked with the international biohazard symbol shown in [Exhibit 346.321](#), except when the secondary container also serves as the outer shipping container. In that case, the biohazard symbol must appear on the inner packaging or on the primary container. A shipping paper and a content marking on the outer shipping container are not required.

2. *Exceeding 50 ml.* A liquid patient specimen, forensic material, or biological product that exceeds 50 ml must be packaged in a securely sealed primary receptacle. A single primary receptacle must not contain more than 500 ml of specimen. Two or more primary receptacles whose combined volume does not exceed 500 ml may be enclosed in a single secondary container. Sufficient absorbent material and cushioning material to withstand shock and pressure changes must surround the primary receptacle(s), or be otherwise configured to take up the entire liquid contents in case of leakage. The primary receptacle(s) and the absorbent cushioning must be enclosed in a secondary container with a leakproof barrier that can prevent failure of the secondary container if the primary receptacle(s) should leak during transport. The secondary container cannot serve as the outer shipping container. The secondary container must be marked with the international biohazard symbol shown in [Exhibit 346.321](#). The secondary container must be securely and snugly enclosed in a fiberboard box or container of equivalent strength that serves as the outer shipping container. A shipping paper and a content marking on the outer shipping container are not required.
- b. *Solid or Dry Specimen.* A solid or dry specimen, such as a saliva swab, blood spot, fecal smear, culture or stock, or forensic material, must be completely dried before packaging in a mailing container or envelope. Cushioning material to withstand shock and pressure changes is required only if the dry specimen is placed in a breakable primary receptacle. When required, the cushioning material must surround the primary receptacle. The primary receptacle (and cushioning material, if required) must be enclosed in a secondary container with a siftproof barrier that can prevent failure of the secondary container if the primary receptacle breaks during shipment. The secondary container must be securely sealed, and it may serve as the outer shipping container if it has sufficient strength to withstand ordinary postal processing. The secondary container must be marked with the international biohazard symbol shown in [Exhibit 346.321](#), except when the secondary container also serves as the outer shipping container. In that case, the biohazard symbol must appear either on the inner packaging or on the primary receptacle. A shipping paper and a content marking on the outer shipping container are not required.

346.326 Exempt Human or Animal Specimens

Note: See Packaging Instruction 6H in Appendix C.

Exempt human or animal specimens as defined in 346.12d are not subject to regulation as hazardous materials but when presented for mailing must be triple-packaged in leakproof (for liquids) or siftproof (for solids) primary receptacles. Sufficient cushioning and absorbent materials must surround each primary receptacle containing liquid. Secondary containers for liquids must be leakproof. Secondary containers for solids must be siftproof. The primary and secondary packaging must be enclosed in a rigid outer shipping container. A single primary receptacle must not contain more than 500 ml of a liquid specimen or 500 grams of a solid specimen. Two or more primary receptacles whose combined volume does not exceed 500 ml (for liquids) or 500 grams (for solids) may be enclosed in a single secondary container. The secondary container cannot serve as the outer shipping container. The secondary container must be marked with the international biohazard symbol shown in Exhibit 346.321. The secondary container must be securely and snugly enclosed in a fiberboard box or container of equivalent strength that serves as the outer shipping container. A shipping paper is not required. The outer shipping container must be marked on the address side with the words “Exempt human specimen” or “Exempt animal specimen,” as appropriate. In addition, at least one surface of the outer packaging must have a minimum dimension of 3.9 inches by 3.9 inches (100 mm by 100 mm). Exempt human and animal specimens are mailable as Priority Mail Express, Priority Mail, First-Class Mail, First-Class Package Service, Parcel Select, or USPS Retail Ground.

346.327 Proper Packaging of Mailable Materials

All mailable materials as identified in 346.212 must be properly packaged.

Exhibit 346.327 lists the specific reference in 346 under which each type of mailable material must be packaged.

Material Being Mailed	Packaging Standards ¹		
	Nonregulated	Category A	Category B
Blood for Transfusion	346.325	nm	346.321
Biological Product	346.325	nm	346.321
Culture or Stock	346.325	nm	346.321
Patient Specimen	346.325	nm	346.321
Exempt Human or Animal Specimen	346.326	n/a	n/a
Forensic Material	346.325	nm	346.324
Regulated Medical Waste	346.322	nm	346.322
Sharps Waste	346.322	nm	346.322
Toxin ²	346.31	nm	346.321
Treated Medical Waste	346.325	n/a	n/a
Used Health Care Product	346.323	nm	346.323

1

nm = Nonmailable.

n/a = Not applicable.

2

Toxin means a Division 6.1 material from a plant, animal, or bacterial source. A toxin containing an infectious substance or a toxin contained in an infectious substance must be classified as Division 6.2; described as an infectious substance; and assigned to UN2814, UN2900, or UN3373, as appropriate. A Division 6.1 toxin that can qualify as an ORM-D material is permitted when packaged under [346.231](#) or [346.31](#).

346.4 Damaged Parcels

If a mailpiece containing a Class 6 material is found to be damaged or leaking during Postal Service handling, the incident must be reported in accordance with POM 139.117 and 139.118 and Handbook EL-812, *Hazardous Materials and Spill Response* (in Part VII, “Response to Hazardous Material Incidents and Emergencies,” see the section titled “Hazardous Materials Incident Reports”), as appropriate. The local Postal Service safety officer (or designee) must immediately initiate the spill response procedures in Handbook EL-812. For spills involving infectious substances (etiologic agents), the following containment and cleanup steps must also be followed:

- a. Wear rubber gloves throughout the spill cleanup procedure.
- b. Surround the leaking package with absorbent material.
- c. Place the leaking package in another box and seal the box.
- d. Place the sealed box in a plastic bag and seal the bag.
- e. Flood affected surfaces and rinse rubber gloves with household chlorine bleach, diluted 1 ounce to 1 gallon of water, and let stand for 5 minutes. Use caution with the chlorine bleach because it is a mildly corrosive oxidizer. Wipe surfaces dry with an absorbent material, place the absorbent material in a plastic bag, and incinerate.
- f. Report the damaged parcel to the Centers for Disease Control and Prevention (CDC) at the telephone number listed in [246](#).
- g. Never dispose of etiologic agents in the trash. Contact the area environmental compliance specialist for specific information on the appropriate disposal procedures.

347 Radioactive Materials (Hazard Class 7)

347.1 Definition

Radioactive material is defined in 49 CFR 173.403 as any material containing radionuclides where both the activity concentration and the total activity in the consignment exceed the values specified in the table in 49 CFR 173.436 or values derived according to the instructions in 49 CFR 173.433.

347.2 Mailability

The following conditions apply:

- a. *International Mail.* Radioactive material is prohibited in international mail if required to bear a Class 7 Radioactive White–I, Radioactive Yellow–II, or Radioactive Yellow–III hazardous materials warning label (see [Exhibit 325.1](#)). See IMM 135.5 for the specific admissibility requirements that are applicable to international shipments of radioactive material. Mailable

radioactive materials shipments may be sent only via First-Class Package International Service with Registered Mail service. Mailable radioactive materials may not have an activity content that exceeds one-tenth of the limits in [Exhibit 347.22](#).

- b. *Domestic Mail via Air Transportation*. All radioactive material is prohibited in domestic air transportation.
- c. *Domestic Mail via Surface Transportation*. Radioactive material is prohibited if it is required to bear a Class 7 Radioactive White–I, Radioactive Yellow–II, Radioactive Yellow–III hazardous materials warning label, or the Fissile label (see [Exhibit 325.1](#)). Mailable radioactive materials may not have an activity content that exceeds the limits in [Exhibit 347.22](#), and must be one of the following materials (proper shipping names and UN identification numbers in 49 CFR 172.101):
 - 1. A radioactive material eligible to be shipped as a limited quantity under 49 CFR 172.101, Radioactive material, excepted package — Limited quantity of material, UN2910.
 - 2. An excepted instrument, article, or device including an instrument and manufactured article (such as a clock, electronic tube, or apparatus) or a similar device that has a radioactive material in gaseous or nondispersible solid form as a component part, Radioactive material, excepted package — instruments *or* articles, UN2911.
 - 3. An excepted article containing natural uranium or thorium, including manufactured articles in which the sole radioactive material is natural or depleted uranium or natural thorium, Radioactive material, excepted package — articles manufactured from natural uranium or depleted uranium or natural thorium, UN2909.

347.21 Nonmailable Radioactive Materials

Any package bearing, or required to bear, one of the Class 7 hazardous materials warning labels for radioactive materials shown in [Exhibit 325.1](#) is nonmailable under any conditions. Report nonmailable materials found in the mailstream to the appropriate officials in accordance with POM 139.117 and 139.118, as applicable. See 347.5 for emergency procedures.

347.22 Mailable Radioactive Materials

As stated in [347.2](#), the only categories of radioactive material that are mailable in international mail or in domestic mail via surface transportation are those that do not have an activity level exceeding the limits in

[Exhibit 347.22](#) and are eligible under 49 CFR to be shipped as excepted packages for limited quantities; excepted packages for instruments and articles; and excepted packages for articles containing natural uranium or thorium. The mailer must provide accurate documentation of the activity limits, which must not exceed those specified in [Exhibit 347.22](#).

Exhibit 347.22

Activity Limits for Mailable Instruments, Articles, and Limited Quantity Radioactive Materials

Nature of Contents	Instruments and articles	Materials Package Limits ¹
--------------------	--------------------------	---------------------------------------

	Limits for Each Instrument or Article ¹	Package Limits ¹	
Solids:			
Special form	$10^{-2} A_1$	A_1	$10^{-3} A_1$
Normal form	$10^{-2} A_2$	A_2	$10^{-3} A_2$
Liquids:			
Tritiated water:			
<0.0037 TBq/liter (0.1 Ci/L)	$10^{-3} A_2$	$10^{-1} A_2$	37 TBq (1000 Ci)
0.0037 TBq to 0.037 TBq/L (0.1 Ci to 1.0 Ci/L)			3.7 TBq (100 Ci)
>0.037 TBq/L (1.0 Ci/L)			0.037 TBq (1.0 Ci)
Other Liquids:	$10^{-3} A_2$	$10^{-1} A_2$	$10^{-4} A_2$
Gases:			
Tritium ²	$2 \times 10^{-2} A_2$	$2 \times 10^{-1} A_2$	$2 \times 10^{-2} A_2$
Special form	$10^{-3} A_1$	$10^{-2} A_1$	$10^{-3} A_1$
Other form	$10^{-3} A_2$	$10^{-2} A_2$	$10^{-3} A_2$

1. For mixture of radionuclides, see 49 CFR 173.433(d).

2. These values also apply to tritium in activated luminous paint and tritium adsorbed on solid carriers.

347.3 Packaging

The following packaging requirements apply:

- Limited Quantities** (49 CFR 173.421). Radioactive materials whose activity per package does not exceed the limits specified in [Exhibit 347.22](#) are excepted from specification packaging, marking, and labeling requirements. All applicable conditions for Packaging Instruction 7A in Appendix C must be met.
- Instruments and Articles** (49 CFR 173.424). Instruments and manufactured articles (including clocks, electronic tubes, or apparatus) or similar devices having radioactive materials in gaseous or nondispersible solid form as a component part (whose activity level does not exceed the limits specified in [Exhibit 347.22](#)) are excepted from specification packaging, marking, and labeling requirements. All applicable conditions for Packaging Instruction 7A in Appendix C must be met.
- Excepted Articles Containing Uranium or Thorium** (49 CFR 173.426). Manufactured articles in which the sole radioactive material is natural or depleted uranium or natural thorium (whose activity level does not exceed the limits specified in [Exhibit 347.22](#)) are excepted

from specification packaging, marking, and labeling requirements. All applicable conditions for Packaging Instruction 7A in Appendix C must be met.

- d. For mailpieces intended for domestic transportation, the radiation level at any point on the external surface of the mailpiece must not exceed 0.5 millirem per hour.

347.4 Marking

The outside of the inner receptacle or the outside of the secondary packaging must be marked "Radioactive." The address side of the mailpiece must clearly and prominently display one of the following markings, as applicable:

- a. *Mailable Limited Quantity Shipments.* "This package conforms to the conditions and limitations specified in 49 CFR 173.421 for radioactive material, excepted package—limited quantity of material, UN2910, and is within Postal Service activity limits for mailing."
- b. *Mailable Instruments and Articles.* "This package conforms to the conditions and limitations specified in 49 CFR 173.424 for radioactive material, excepted package—instruments or articles, UN2911, and is within Postal Service activity limits for mailing."
- c. *Mailable Excepted Articles Containing Uranium or Thorium.* "This package conforms to the conditions and limitations specified in 49 CFR 173.426 for radioactive material, excepted package—articles manufactured from natural uranium (or natural thorium), UN2909, and is within Postal Service activity limits for mailing."

347.5 Emergency Procedures

When a nonmailable package of radioactive material is discovered intact in the mailstream, the following procedures must be immediately followed:

- a. Place the parcel at least 15 feet from other mail or personnel. Under no circumstances may the package be dispatched.
- b. Report the mailpiece to the appropriate officials in accordance with POM 139.117 and 139.118, as applicable.
- c. If a package of radioactive material is damaged or is leaking, immediately contact the facility safety officer (or designee). The safety officer will:
 - Follow the appropriate spill-response procedures.
 - Isolate the area around the damaged package to prevent contact with people.
 - Isolate any conveyor, belt, chute, or other equipment or conveyance, including mailbags, in which the radioactive material has leaked or may have leaked.
 - Rope off or guard the isolated area whenever practical.
 - Place a temporary sign indicating the presence of radioactive materials and bearing a warning to stay beyond the edge of the roped area.
- d. The local postmaster or facility manager must immediately request the assistance of qualified persons to check radiation hazards and to supervise the salvage and decontamination. This assistance may be received from the mailer (if known) or from one of the following contacts: Nearest office of the Department of Energy (DOE) as listed in [Exhibit 347.5c\(1\)](#) or DOE's national emergency number and website are:

DEPARTMENT OF ENERGY (DOE)
EMERGENCY OPERATIONS CENTER
Telephone: 202-586-8100

www.doe.gov

2. Local health, fire, or police departments.
3. Local civil defense authorities.
4. Nearby military installations.
5. Nearby scientific laboratories.
6. The Nuclear Regulatory Commission, the Environmental Protection Agency, and the Federal Emergency Management Agency, whose national emergency numbers and websites are as follows:

NUCLEAR REGULATORY COMMISSION (NRC)
Telephone: 301-816-5100

www.nrc.gov

ENVIRONMENTAL PROTECTION AGENCY (EPA)
NATIONAL RESPONSE CENTER
Telephone: 800-424-8802

www.epa.gov

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)
NATIONAL EMERGENCY COORDINATION CENTER
Telephone: 202-646-2400

www.fema.gov

Exhibit 347.5c(1)

DOE Regional Coordinating Offices

Department of Energy		
Regional Coordinating Offices for Geographical Areas of Responsibility		
Regional Coordinating Office	Telephone for Assistance	Areas Served
1. Brookh aven, NY	631-344-220 0	Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont
2. Oak Ridge, TN	865-576-100 5	Arkansas, Kentucky, Louisiana, Mississippi, Missouri, Tennessee, Virginia, West Virginia (includes Puerto Rico and the Virgin Islands)
3. Savann ah	803-725-333 3	Alabama, Florida, Georgia, North Carolina, South Carolina

River, SC		
4. Albuquerque, NM	505-845-466 7	Arizona, Kansas, New Mexico, Oklahoma, Texas
5. Chicago, IL	630-252-480 0	Illinois, Indiana, Iowa, Michigan, Minnesota, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin
6. Idaho Falls, ID	208-526-151 5	Colorado, Idaho, Montana, Utah, Wyoming
7. Oakland, CA	925-422-895 1	California, Hawaii, Nevada
8. Richland, WA	509-373-380 0	Alaska, Oregon, Washington
Headquarters – Washington, DC	202-586-810 0	

348 Corrosives (Hazard Class 8)

348.1 Definition

A *corrosive* is any liquid or solid that causes visible destruction or irreversible alteration in human skin tissue at the site of contact, or a liquid that has a severe corrosion rate on steel. The term “corrosive” includes all items commonly referred to as acids, as well as most batteries.

348.2 Mailability

- a. *International Mail.* All corrosives are prohibited.
- b. *Domestic Mail.* A corrosive that can qualify as an air-eligible mailable limited quantity is permitted via air (or ground) transportation. An ORM-D material that can be renamed with the proper shipping name, “Consumer Commodity”, is permitted via surface transportation only. Mailable corrosives are also subject to the following:
 1. A liquid mixture must be 1 pint (16 oz) or less and must contain 15 percent or less corrosive material, with the remainder of the mixture not being a hazardous material, unless otherwise specified in [348.22](#) for a specific corrosive material.

2. A solid mixture must be 10 pounds or less per primary receptacle and must contain 10 percent or less corrosive material, with the remainder of the mixture not being a hazardous material, unless otherwise specified for a specific corrosive solid.

348.21 Nonmailable Corrosives

Nonmailable corrosives include the following:

- a. *Batteries* (UN2794, UN2795) with liquid electrolyte (such as automobile lead acid batteries), except for the nonspillable type allowed under [348.22](#).
- b. *Nitric Acid* (UN2031, UN2032).
- c. *Fuming and Spent Sulfuric Acids* (UN1831, UN1832).
- d. *Hydrofluoric Acid* (UN1790).
- e. Mercury (UN2809), and devices containing metallic mercury, such as thermometers, barometers, and sphygmomanometers (i.e., blood pressure meters).

348.22 Mailable Corrosives

As a rule, liquid corrosives are limited to 15 percent solution or less as stated in [348.2](#), unless otherwise specified below. Mailable corrosives include the following:

- a. *Acetic Acid* (UN2790). Acceptable in solutions that qualify as mailable limited quantity material, or an ORM-D material (for surface only), and contain less than 80 percent acid and do not exceed 1 pint. Packaging Instruction 8A must be followed.
- b. *Batteries*. Mailable batteries include:
 1. Common household dry-cell batteries such as sizes AA, AAA, C, D, etc. are generally not regulated as hazardous materials and are therefore mailable. For nickel-metal hydride batteries in sea transportation, see 49 CFR 122.102, Special Provision 130. Packaging requirements in DMM 601.1-7 apply.
 2. A nonspillable wet battery containing liquid electrolyte is permitted to be mailed only if the battery casing is completely sealed to prevent the liquid corrosive from spilling during Postal Service handling. Nonspillable batteries with UN2800 are prohibited in international mail but may be sent as domestic mail via air or surface transportation when prepared within the conditions of Packaging Instruction 8B in Appendix [C](#).
 3. For lithium and lithium-ion batteries, see [349.22](#).
- c. *Hydrochloric Acid* (UN1789). Acceptable only in solutions not exceeding 10 percent acid that can qualify as a mailable limited quantity material, or an ORM-D material (for surface only). Packaging Instruction 8A in Appendix [C](#) must be followed.
- d. *Sulfuric Acid* (UN2796). Acceptable only in solutions less than 25 percent acid that can qualify as a mailable limited quantity material, or an ORM-D material (for surface only). Packaging Instruction 8A in Appendix [C](#) must be followed.
- e. *Dyes* (UN2801, UN3147). Acceptable if the dyes can qualify as a mailable limited quantity material, or an ORM-D material (for surface only). Mailable dyes must be packaged as required in [348.3](#) and Packaging Instruction 8A in Appendix [C](#).
- f. *Photographic Mixtures*. Acceptable if the corrosive liquid solutions for preparing photographic processing mixtures can qualify as a mailable limited quantity material, or an ORM-D material (for surface only). Packaging Instruction 8A in Appendix [C](#) must be followed. When these liquids are in securely closed and sealed bottles that are properly cushioned, they may

be packed in the same outside shipping container with required amounts of packaged dry chemicals not classified as hazardous materials (provided no dangerous reaction would occur should the contents of the bottles be mixed with the dry chemicals).

- g. *Manufactured devices that contain small amounts of mercury* (UN3506). Compact Fluorescent Lamps (CFL) and similar consumer devices containing minute amounts of mercury are mailable by air or surface only when each device, article, or apparatus contains 100 milligrams (mg) (0.0035 ounce) or less of mercury (less than a grain of salt) and each mailpiece contains no more than 1 gram (g) (0.035 ounce) of mercury. Mercury contained in devices categorized under UN3506 typically exists in a vaporized state — no metallic mercury will be visible in UN3506 devices. See Packaging Instruction 8C in Appendix C for mailing details.

348.3 Packaging

Mailable corrosives, both liquids and solids, must meet the applicable requirements in 348.2b and be prepared as required in Packaging Instruction 8A in Appendix C, or as permitted in [348.22](#).

348.4 Marking and Documentation

Parcels containing mailable corrosive material must be marked as follows:

- a. For air transportation, a mailpiece containing a mailable corrosive material must bear the DOT square-on-point marking. The top and bottom portions of the square-on-point and the border forming the square-on-point must be black, and the center must be white or of a suitable contrasting background. The symbol “Y” must be black, located in the center of the square-on-point, and clearly visible. Mailpieces must also bear the appropriate approved DOT Class 8 hazardous material warning label, the identification number, and the proper shipping name. A properly completed shipper’s declaration for dangerous goods must be affixed to the outside of the mailpiece.
- b. For surface transportation, parcels containing mailable Class 8 materials must be plainly and durably marked on the address side with “Surface Only” or “Surface Mail Only” and “ORM-D,” immediately following or below the proper shipping name (e.g., Consumer Commodity). Optionally, mailpieces may be marked with an approved DOT limited quantity square-on-point marking (see [Exhibit 325.2a](#)). The top and bottom portions of the square-on-point and the border forming the square-on-point must be black, and the center must be white or of a suitable contrasting background. Surface shipments containing qualifying ORM-D material bearing the square-on-point limited quantity marking are not required to be marked with the shipping name and identification number. A shipper’s declaration for dangerous goods is not required for mailable Class 8 corrosives sent via surface transportation.
- c. When the DOT square-on-point markings are used, markings must be durable, legible, and readily visible, and must be applied on at least one side or one end of the outer packaging. The border forming the square-on-point must be at least 2 mm in width, and the minimum dimension of each side must be 100 mm, unless the package size requires a reduced size marking of no less than 50 mm on each side.

349 Miscellaneous Hazardous Materials

(Hazard Class 9)

349.1 Definition

A miscellaneous hazardous material is a substance or article that presents a hazard during transportation, but does not meet the definition of any other hazard class. Examples of miscellaneous hazardous materials (not all of which are mailable) include solid dry ice, lithium batteries, magnetized materials, elevated temperature substances, environmentally hazardous substances, life-saving appliances (i.e., automobile air-bags, self-inflating life vests), and asbestos. Miscellaneous hazardous materials include:

- a. Any material that has an anesthetic, noxious, or other similar property that could cause extreme annoyance or discomfort to a flight crew member.
- b. Any elevated temperature material, hazardous substance, hazardous waste (other than Division 6.2 medical waste), or marine pollutant.

349.11 Lithium Battery — Classifications:

- a. *Lithium-ion cell or battery* means a rechargeable electrochemical cell or battery in which the positive and negative electrodes are both lithium compounds constructed with no metallic lithium in either electrode. These batteries are also referred to as secondary or rechargeable lithium cells or batteries, and are typically used in cell phones and laptop computers.
- b. *Lithium-ion polymer cell or battery* means a rechargeable cell or battery that uses lithium-ion chemistries and is regulated as a lithium-ion cell or battery.
- c. *Lithium metal cell or battery* means an electrochemical cell or battery utilizing lithium metal or lithium alloys as the anode. The lithium content of a lithium metal or lithium alloy cell or battery is measured when the cell or battery is in an undischarged state. The lithium content of a lithium metal or lithium alloy battery is the sum of the grams of lithium content contained in the component cells of the battery. These batteries are also referred to as primary or nonrechargeable lithium cells or batteries, and are often used in consumer products such as cameras and flashlights.
- d. *Button cell battery* means a small single cell round battery with the overall height less than the diameter. Button cells are used to power small portable electronic devices such as wrist watches, pocket calculators, and hearing aids, and are often installed in electronic devices as auxiliary power sources. For the purposes of mailability as button cell batteries, lithium metal batteries must contain no more than 0.3 gram of lithium content and lithium-ion batteries must be 2.7 watt-hours or less.
- e. *Lithium cell* means a single encased electrochemical unit with a single positive electrode (anode) and single negative electrode (cathode), which exhibits a voltage differential across its terminals. For the purpose of mailability, marking, and documentation requirements, a single cell lithium battery is classified as a lithium cell.
- f. *Lithium battery* means one or more lithium cells which are electrically connected together by a permanent means, including case, terminals, and markings.

349.12 Lithium Battery — Definitions

- a. *Equipment* means the device or apparatus for which the lithium cells or batteries will provide electrical power for its operation.
- b. *Lithium battery consignment* means one or more mailpieces containing lithium batteries, entered into USPS networks by one mailer or mail service provider within a single mailing or retail transaction, or included in the same manifest or shipping services file, and intended for delivery to a single consignee at a single destination address.
- c. *Short circuit* means a direct connection between positive and negative terminals of a cell or battery that provides an abnormally low resistance path for current flow.
- d. *Watt-hour (Wh)* means a unit of energy equivalent to one watt (1 W) of work acting for one hour (1 h) of time. The watt-hour rating of a lithium-ion cell or battery is determined by multiplying the rated capacity of a cell or battery in ampere-hours, by its nominal voltage. Therefore, watt-hour (Wh) = ampere-hour (Ah) x volts (V).

349.2 Mailability

- a. *International Mail.* All miscellaneous hazardous materials are prohibited, except for certain magnetized materials as permitted in [349.242a](#) and IMM 136.1g, and small consumer-type lithium batteries (installed in the equipment they operate) as permitted in [622.5](#) and IMM 135.6.
- b. *Domestic Mail.* A miscellaneous hazardous material that can qualify as a mailable air-eligible consumer commodity material (ID8000) when intended for air transportation, or an ORM-D material when intended for ground transportation, is permitted for domestic mail, subject to the applicable 49 CFR requirements. Only UN3077, UN3082, UN3175, UN3334, and UN3335 Class 9 materials are mailable by air transportation; mailpieces including eligible quantities of these materials must be marked with the proper shipping name “Consumer Commodity.” Additionally, lithium batteries, dry ice, and magnetized materials are permitted within the specific limits provided in [349.221](#), [349.222](#), [349.23](#), and [349.24](#).

349.21 Nonmailable Class 9 Materials

The following materials are prohibited:

- a. All Class 9 materials that cannot qualify as a consumer commodity material (or an ORM-D material, for surface transportation only) except dry ice, lithium batteries, and magnetized materials.
- b. All magnetized materials that have a measurable magnetic field strength greater than 0.00525 gauss at 15 feet.
- c. For air transportation, all magnetized materials that can cause a compass deviation at a distance of 7 feet or more.
- d. In domestic mail via air transportation, dry ice in quantities exceeding 5 pounds per mailpiece.
- e. All lithium batteries in international mail, unless they are within the specified limits and only when properly installed in the equipment they operate.

- f. All lithium batteries in domestic air transportation, unless they are within the specified limits and only when properly installed in, or packed with, the equipment they are intended to operate.

349.22 Mailable Class 9 Materials

349.221 Lithium Metal (Nonrechargeable) Cells and Batteries — Domestic

For domestic mailings only, small consumer-type lithium metal cells or batteries (also called primary lithium cells or batteries) like those used to power cameras and flashlights are mailable domestically under the following conditions. See [622](#) or IMM 136 when mailing batteries internationally or to APO/FPO/DPO destinations.

- a. *General.* The following restrictions apply to the mailability of all lithium metal (or lithium alloy) cells and batteries:
 - 1. Each cell must contain no more than 1.0 gram (g) of lithium content per cell.
 - 2. Each battery must contain no more than 2.0 g aggregate lithium content per battery.
 - 3. Each cell or battery must meet the requirements of each test in the UN Manual of Tests and Criteria, part III, and subsection 38.3 as referenced in DOT's hazardous materials regulation at 49 CFR 171.7.
 - 4. All outer packages must have a complete delivery and return address.
 - 5. All packaging must meet applicable requirements specified in 49 CFR 173.185. Except for mailpieces containing button cell batteries properly installed in the equipment they are intended to operate, mailpieces containing lithium metal batteries must be rigid, sealed, and of adequate size, so the mark can be affixed to the address side without the mark being folded. The use of padded and poly bags as outer packaging is permitted only when the mailpieces contain button cell batteries meeting the classification criteria in 349.11d, the batteries are properly installed in the equipment they are intended to operate, and the batteries are afforded adequate protection by that equipment.
 - 6. Except for mailpieces containing button cell batteries installed in equipment (including circuit boards), or no more than 4 lithium metal cells or 2 lithium metal batteries installed in the equipment they operate, mailpieces containing lithium metal batteries must bear a DOT-approved lithium battery mark, as specified in 49 CFR 173.185(c)(3)(i) and Exhibit 325.2a, applied to the address side of the mailpiece. Marks must not be applied in such a manner that parts of the mark appear on different sides of the mailpiece.
 - 7. The mark must indicate UN3090 for lithium metal cells or batteries. UN3091 must be indicated where the lithium cells or batteries are contained in or packed with the equipment they are intended to operate. The mark must also include a telephone number for those who need to obtain additional information.
- b. *Installed in Equipment.* The following additional restrictions apply to the mailing of lithium metal cells or batteries properly installed in the equipment they operate:
 - 1. The batteries installed in the equipment must be protected from damage and short circuit.
 - 2. The equipment must be equipped with an effective means of preventing it from being inadvertently turned on or activated.

3. The equipment must be cushioned to prevent movement or damage and, unless excepted under 349.221a(5), must be contained in rigid outer packaging, sealed and strong enough to prevent crushing of the package or exposure of the contents during normal handling in the mail.
 4. For lithium metal cells and batteries containing no more than 0.3 gram of lithium content, no mailpiece may exceed 2.5 kilograms (5.5 pounds). There is no maximum number of cells or batteries per mailpiece.
 5. For lithium metal cells containing more than 0.3 gram but no more than 1.0 gram of lithium content, and batteries containing more than 0.3 gram but no more than 2.0 grams of lithium content, no mailpiece may exceed 5 kilograms (11 pounds). Each mailpiece may contain a maximum of 8 cells or 2 batteries, with no more than 1.0 gram of lithium content per cell or 2.0 grams of lithium content per battery.
 6. When required or optionally applied, mailpieces must display a DOT-approved lithium battery mark on the address side.
 7. DOT-approved lithium battery markings must be applied to all mailpieces when there are more than two mailpieces in a single consignment as defined in 349.12b.
- c. *Mailed With Equipment.* The following additional restrictions apply to the mailing of lithium metal cells or batteries shipped with (but not installed in) the device or equipment being mailed:
1. The shipment cannot contain more batteries than the number needed to operate the device.
 2. The lithium metal cells and batteries must be packaged separately and cushioned to prevent movement or damage.
 3. The shipment must be cushioned to prevent movement or damage, and must be contained in rigid outer packaging, sealed and strong enough to prevent crushing of the package or exposure of the contents during normal handling in the mail.
 4. For lithium metal cells and batteries containing no more than 0.3 gram of lithium content, no mailpiece may exceed 2.5 kilograms (5.5 pounds). There is no maximum number of cells or batteries per mailpiece.
 5. For lithium metal cells containing more than 0.3 gram but no more than 1.0 gram of lithium content, and batteries containing more than 0.3 gram but no more than 2.0 grams of lithium content, no mailpiece may exceed 5 kilograms (11 pounds). Each mailpiece may contain a maximum of 8 cells or 2 batteries, with no more than 1.0 gram of lithium content per cell or 2.0 grams of lithium content per battery.
 6. Mailpieces must display a DOT-approved lithium battery mark on the address side.
- d. *Mailed Without Equipment.* The following additional restrictions apply to the mailing of lithium metal cells or batteries without equipment (individual batteries):
1. The lithium metal cells and batteries must be mailed in “the originally sealed packaging.”
 2. The sealed packages of batteries must be separated and cushioned to prevent short circuit, movement, or damage.
 3. The shipment must be cushioned to prevent movement or damage, and must be contained in rigid outer packaging, sealed and strong enough to prevent crushing of the package or exposure of the contents during normal handling in the mail.
 4. Mailpieces must be sent by surface transportation only.

5. Mailpieces must display a DOT-approved lithium battery mark on the address side, in addition to the text “Surface Mail Only, Primary Lithium Batteries — Forbidden for Transportation Aboard Passenger Aircraft” or “Surface Mail Only, Lithium Metal Batteries — Forbidden for Transportation Aboard Passenger Aircraft.”
6. The mailpiece must not exceed 5 pounds.

349.222 Lithium-ion (Rechargeable) Cells and Batteries — Domestic

Small consumer-type lithium-ion cells and batteries (also called secondary lithium cells or batteries) like those used to power cell phones and laptop computers are only mailable domestically under the following conditions. See [622](#) or IMM 135.6 when mailing batteries internationally or to and from APO/FPO/DPO destinations.

- a. *General.* The following additional restrictions apply to the mailability of all secondary lithium-ion or lithium polymer cells and batteries:
 1. The watt-hour rating must not exceed 20 Wh per cell.
 2. The watt-hour rating must not exceed 100 Wh per battery.
 3. Each battery must bear the “Watt-hour” or “Wh” marking on the battery to determine if it is within the limits defined in items 1 and 2.
 4. Each cell or battery must meet the requirements of each test in the UN Manual of Tests and Criteria, part III, and subsection 38.3 as referenced in DOT’s hazardous materials regulation at 49 CFR 171.7.
 5. All outer packages must have a complete delivery and return address.
 6. All packaging must meet applicable requirements specified in 49 CFR 173.185. Except for mailpieces containing button cell batteries properly installed in the equipment they are intended to operate, mailpieces containing lithium-ion batteries must be rigid, sealed, and of adequate size, so the mark can be affixed to the address side without the mark being folded. The use of padded and poly bags as outer packaging is permitted only when the mailpieces contain button cell batteries meeting the classification criteria in 349.11d, the batteries are properly installed in the equipment they are intended to operate, and the batteries are afforded adequate protection by that equipment.
 7. Except for mailpieces containing button cell batteries installed in equipment (including circuit boards), or no more than 4 lithium-ion cells or 2 lithium-ion batteries installed in the equipment they operate, mailpieces containing lithium-ion batteries must bear a DOT-approved lithium battery mark, as specified in 49 CFR 173.185(c)(3)(i) and Exhibit 325.2a, applied to the address side of the mailpiece. Marks must not be applied in such a manner that parts of the mark appear on different sides of the mailpiece. Where the lithium cells or batteries are shipped separately from equipment, the mark must indicate UN3480. Where the lithium cells or batteries are contained in, or packed with, equipment, UN3481 must be indicated. The mark must also include a telephone number for those who need to obtain additional information.
- b. *Installed in Equipment.* The following additional restrictions apply to the mailing of lithium-ion cells or batteries properly installed in equipment they operate:
 1. The batteries installed in the equipment must be protected from damage and short circuit.

2. The equipment must be equipped with an effective means of preventing it from being inadvertently turned on or activated.
 3. The equipment must be cushioned to prevent movement or damage and, unless excepted under 349.222a(6), must be contained in rigid outer packaging, sealed and strong enough to prevent crushing of the package or exposure of the contents during normal handling in the mail.
 4. For lithium-ion cells and batteries with a watt-hour rating of not more than 2.7 Wh, no mailpiece may exceed 2.5 kilograms (5.5 pounds). There is no maximum number of cells or batteries per mailpiece.
 5. For lithium-ion cells with a watt-hour rating of not more than 20 Wh, and batteries with a watt-hour rating of not more than 100 Wh, each mailpiece must contain no more than 8 cells or 2 batteries. Each cell must have a watt-hour rating of no more than 20 Wh, and each battery must have a watt-hour of no more than 100 Wh.
 6. When required or optionally applied, mailpieces must display a DOT-approved lithium battery mark on the address side.
 7. DOT-approved lithium battery markings must be applied to all mailpieces when there are more than two mailpieces in a single consignment as defined in 349.12b.
- c. *Mailed With Equipment.* The following additional restrictions apply to the mailing of lithium-ion cells or batteries shipped with (but not installed in) the device or equipment being mailed:
1. For lithium-ion cells and batteries with a watt-hour rating of not more than 2.7 Wh, no mailpiece may exceed 2.5 kilograms (5.5 pounds). There is no maximum number of cells or batteries per mailpiece.
 2. For lithium-ion cells with a watt-hour rating of not more than 20 Wh, and batteries with a watt-hour rating of not more than 100 Wh, each mailpiece must contain no more than 8 cells or 2 batteries. Each cell must have a watt-hour rating of no more than 20 Wh, and each battery must have a watt-hour of no more than 100 Wh.
 3. The shipment must be cushioned to prevent movement or damage, and must be contained in rigid outer packaging, sealed and strong enough to prevent crushing of the package or exposure of the contents during normal handling in the mail.
 4. Mailpieces must display a DOT-approved lithium battery mark on the address side.
- d. *Mailed Without Equipment.* The following additional restrictions apply to the mailing of lithium-ion cells or batteries without equipment (individual batteries):
1. The lithium-ion cells and batteries must be mailed in “the originally sealed packaging.”
 2. The sealed packages of batteries must be separated and cushioned to prevent short circuit, movement, or damage.
 3. The shipment must be cushioned to prevent movement or damage, and must be contained in rigid outer packaging, sealed and strong enough to prevent crushing of the package or exposure of the contents during normal handling in the mail.
 4. Unless both mailed from, and intended for delivery to, the state of Alaska under 349.222d(7), mailpieces must be sent by surface transportation only.
 5. The mailpiece must not exceed 5 pounds.
 6. Mailpieces must display a DOT-approved lithium battery mark on the address side, in addition to the text “Surface Mail Only, Secondary Lithium Batteries — Forbidden for

Transportation Aboard Passenger Aircraft” or “Surface Mail Only, Lithium-ion Batteries — Forbidden for Transportation Aboard Passenger Aircraft.”

7. Cells having a watt-hour rating of not more than 20 Wh, and batteries having a watt-hour rating of not more than 100 Wh may be mailed via air transportation only when both mailed from, and intended for delivery within, the state of Alaska. Each mailpiece must contain no more than 8 cells or 2 batteries.
8. Mailpieces must display a DOT-approved lithium battery mark on the address side.

Exhibit 349.222

Domestic Lithium Battery Mailability

	Surface Transportation	Air Transportation	Mailpiece Limitations ¹
Lithium Metal or Lithium Alloy Batteries^{2, 3} <i>Small, non-rechargeable, consumer-type batteries</i>			
Contained in (properly installed in equipment)	Mailable	Mailable	8 cells or 2 batteries 11lbs.
Packed with equipment, but not installed in the equipment	Mailable	Mailable	8 cells or 2 batteries 11lbs.
Without the equipment they operate (individual batteries in originally sealed packaging)	Mailable	Prohibited	5 lbs.
Lithium-ion or Lithium Polymer Batteries^{4, 5} <i>Small, rechargeable, consumer-type batteries</i>			
Contained in (properly installed in equipment)	Mailable	Mailable	8 cells or 2 batteries
Packed with equipment, but not installed in the equipment	Mailable	Mailable	8 cells or 2 batteries
Without the equipment they operate (individual batteries in originally sealed packaging)	Mailable	Prohibited	5 lbs.
Without the equipment they operate (individual batteries in originally sealed packaging) (Intra-Alaska only)	*	Mailable	8 cells or 2 batteries
Very Small Lithium Metal or Lithium-ion Batteries^{6, 7} <i>Exception for very small consumer-type batteries in USPS air transportation</i>			

Contained in (properly installed in equipment)	Mailable	Mailable	No limit on cells/batteries 5.5 pounds
Packed with equipment, but not installed in the equipment	Mailable	Mailable	No limit on cells/batteries 5.5 pounds
Damaged/Recalled Batteries	Prohibited, unless approved by the manager, Product Classification.		

1. When a mailpiece limitation of 8 cells or 2 batteries is applicable, a mailpiece may contain either 8 cells or 2 batteries, not both.
2. Each cell must not contain more than 1g lithium content.
3. Each battery must not contain more than 2g aggregate lithium content.
4. Each cell must not exceed more than 20 Wh (watt-hour rating).
5. Each battery must not exceed 100 Wh.
6. Each lithium metal or lithium alloy cell or battery must not exceed 0.3 gram of lithium content.
7. Each lithium-ion or lithium polymer cell or battery must not exceed 2.7 Wh.

349.23 Dry Ice

349.231 General

Dry ice is primarily used to keep other items cool. The items being cooled can be either mailable hazardous materials or nonhazardous items, such as medical specimens or foods.

349.232 Characteristics and Precautions

Dry ice (carbon dioxide solid) is produced by expanding liquid carbon dioxide to vapor and compacting the material into blocks. When dry ice converts (dissipates) to a gaseous form, it takes in heat from its surroundings. The resulting gas is heavier than air and can cause suffocation in confined areas as air is displaced. When dry ice is enclosed in a thick metal or other restrictive type of container, internal pressure builds up and could cause the container to rupture or explode. Mailpieces containing dry ice must be handled with care because its very low temperature (about –110° F

or –79° C) can cause severe burns to skin upon direct contact.

349.233 Dry Ice Mailability

Dry ice is permitted to be mailed when it is used as a refrigerant to cool the content of a mailable hazardous or nonhazardous material. Packages containing dry ice must be packed in containers that permit the release of carbon dioxide gas and conform to 49 CFR 173.217 and 175.10(a)(10).

Mailpieces containing dry ice are subject to the following conditions, as applicable:

- a. *International Mail.* Dry ice is prohibited.
- b. *Domestic Mail via Air Transportation.* Dry ice is permitted in quantities of up to 5 pounds per mailpiece. Mailpieces containing dry ice are subject to the conditions for Packaging Instruction 9A in Appendix C, as applicable.

- c. *Domestic Mail via Surface Transportation.* A mailpiece sent via surface transportation may contain more than 5 pounds of dry ice. Mailpiece preparation is subject to the conditions for Packaging Instruction 9A in Appendix C.

Note: A mailpiece that is prepared for surface transportation *must not, under any circumstances*, be routed via air transportation.

349.24 Magnetized Materials

A magnetized material is not classified within any of the nine hazard classes. Such material is regulated as a hazardous material only if offered for carriage on air transportation and when it has a magnetic field strength capable of causing the deviation of aircraft instruments.

349.241 Definition

A magnetized material is any article that has a magnetic field strength capable of causing the deviation of aircraft instruments. A magnetized material is regulated as a hazardous material when it is presented for air transportation and has a measurable magnetic field strength greater than 0.00525 gauss at 15 feet. Magnetized materials include magnets and magnetized devices such as magnetrons and light meters of sufficient strength to possibly cause erroneous aircraft compass readings. If the maximum field strength observed at a distance of 7 feet is less than 0.002 gauss or there is no significant compass deflection (less than 0.5 degree), the article is not restricted as a magnetized material.

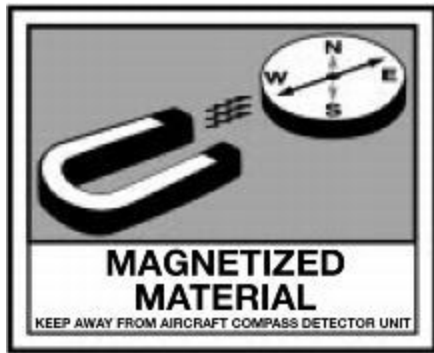
349.242 Mailability

Magnetized materials that have a magnetic field strength of 0.002 gauss or more at a distance of 7 feet from any point on the surface of the outer packaging are mailable via air transportation if properly packaged. Magnetized materials that have a field strength greater than 0.00525 gauss at 15 feet are nonmailable under any conditions. The following requirements also apply:

- a. *International Mail.* Only non-regulated magnetized materials that have a magnetic field strength less than 0.002 gauss at a distance of 7 feet may be sent internationally. Magnetized materials which are regulated are prohibited. See 622.4 or IMM 136.1.
- b. *Domestic Mail via Air Transportation.* Magnetized materials that have a magnetic field strength greater than 0.00525 gauss at 15 feet are prohibited. A magnetic field strength less than 0.002 gauss at a distance of 7 feet is not regulated. Mailpiece preparation is subject to the conditions in Packaging Instruction 9B in Appendix C. The address side of the outer packaging must bear the magnetized material warning label shown in Exhibit 349.242b and a shipping paper is required, if regulated.
- c. *Domestic Mail via Surface Transportation.* Magnetized material is not regulated as a hazardous material when transported via surface transportation.

Exhibit 349.242b

Warning Label for Magnetized Materials



349.3 Packaging

For mailable Class 9 materials, the following packaging requirements as detailed in the Packaging Instructions in Appendix C apply:

- a. Packaging Instruction 9A must be followed for mailable quantities of dry ice.
- b. Packaging Instruction 9B must be followed for mailable types of magnetized materials.
- c. Packaging Instruction 9C must be followed for Class 9 miscellaneous hazardous materials that can qualify as a mailable air-eligible consumer commodity material (ID8000) when intended for air transportation, or an ORM-D material when intended for ground transportation.
- d. Packaging Instruction 9D must be followed for lithium and lithium-ion cells and batteries.

349.4 Marking and Documentation

Parcels containing mailable Class 9 material must be marked as follows:

- a. For air transportation, a mailpiece Class 9 material must bear the DOT square-on-point marking. The top and bottom portions of the square-on-point and the border forming the square-on-point must be black, and the center must be white or of a suitable contrasting background. The symbol "Y" must be black, located in the center of the square-on-point, and clearly visible. Mailpieces intended for transport by air and containing eligible limited quantity material of DOT Classes 2, 3, and 6.1, or eligible hazard Class 9 limited quantity material categorized in UN3077, UN3082, UN3175, UN3334, or UN3335, must be marked with the proper shipping name "Consumer Commodity" and identification number "ID8000." Each mailpiece must also display an approved DOT Class 9 hazardous material warning label (see [Exhibit 325.2b](#)). A shipper's declaration for dangerous goods that is prepared in triplicate must be affixed to the outside of the mailpiece.
- b. For surface transportation, parcels containing mailable Class 9 materials must be plainly and durably marked on the address side with "Surface Only" or "Surface Mail Only" and "ORM-D," immediately following or below the proper shipping name (e.g., Consumer Commodity). Optionally, mailpieces may be marked with an approved DOT limited quantity square-on-point marking (see [Exhibit 325.2a](#)). The top and bottom portions of the square-on-point and the border forming the square-on-point must be black, and the center must be white or of a suitable contrasting background. Surface shipments containing qualifying ORM-D material bearing the square-on-point limited quantity marking are not required to be marked with the shipping name and identification number.

- c. When the DOT square-on-point markings are used, markings must be durable, legible, and readily visible, and must be applied on at least one side or one end of the outer packaging. The border forming the square-on-point must be at least 2 mm in width, and the minimum dimension of each side must be 100 mm, unless the package size requires a reduced size marking of no less than 50 mm on each side.
- d. The specific marking and documentation requirements for dry ice, magnetized materials, and lithium batteries are specified in Packaging Instruction 9A, Packaging Instruction 9B, and Packaging Instruction 9D in Appendix C, as applicable.