United States Department of State

Washington, D.C. 20520

U.S. Department of State Personal Property Advisory

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From: U.S. Department of State, Office of Logistics Management, Transportation Management Division, Washington, D.C.

To: DoS-Approved Personal Property Transportation Service Providers (TSP)

Subject: Lithium Batteries in Personal Property Shipments

1. This transportation advisory serves as notification of the change in policy to 14 FAM 611.7, allowing the shipment of certain lithium batteries of limited size, quantity, and energy level in personal property shipments.

2. The new lithium battery policy has immediate effect.

3. BACKGROUND: Lithium cells and batteries are more energy dense than ever due to improved technology and consumer demand for higher-powered devices. With increased energy density comes greater risks and the need to manage them, particularly during transport. Note: *all* lithium cells and batteries are hazardous during transport, regardless of size or quantity. Unlike standard alkaline batteries, most lithium batteries contain a flammable electrolyte and have an incredibly high energy density. As illustrated in recent media stories, high temperature rapidly spreading fires have become increasingly common as the devices that use these batteries grow in popularity. Transportation Service Providers and Transportation Offices are required to strictly comply with and enforce this policy for safety reasons.

4. TYPES OF LITHIUM BATTERIES: There are many different chemistries of lithium cells and batteries but for transportation purposes all lithium cells and batteries fall into one of two basic types - lithium ion and lithium metal. Both battery types are characterized by a higher energy and a longer operating life than alkaline, nickel cadmium, and nickel metal hydride chemistries. The battery types are further described as follows:

- Lithium-ion (Li-ion), including lithium polymer (Li-Po)
    - are generally rechargeable (secondary) batteries; and
    - are found in a wide range of electronic devices such as laptop and tablet computers, cell phones, cordless electric razors, electric toothbrushes, cordless power tools, etc.
- Lithium metal (UM), aka "coin batteries"
    - are generally non-rechargeable (primary, one-time use); and

- are commonly used in hearing aids, wristwatches, smoke detectors, cameras, key fobs, children's toys, etc.

NOTE: Most lithium metal batteries found in household products, such as the very common sized CR2032 battery, are well under the one (1) gram lithium content limit. End note.

5. CRITERIA FOR SHIPPING LITHIUM BATTERIES: The only lithium batteries allowed in an employee's personal effects shipment (household effects (HHE), unaccompanied air baggage (UAB), and layette (LAY)) are batteries of limited size, quantity, and energy level designed for and installed in the equipment and needed to power/operate the device. These batteries are defined as "contained in" the equipment. See paragraph 9 for prohibited lithium batteries in all personal effects shipments. At the time of pack out, employees should ensure to clearly identify on the packing list which boxes contain lithium batteries.

6. ALLOWED LITHIUM BATTERY SIZE, QUANTITY, AND ENERGY LEVEL: Only lithium batteries meeting the following very limited size, quantity, and energy levels are allowed in an employee's personal effects shipment between duty stations when the battery is installed in the equipment:

- Lithium-ion batteries rated at 100 watt-hours (Wh) or less (20 Wh or less for single cell). Each personal effects shipment, regardless of type (HHE, UAB, or LAY) or transport mode (air or surface), is limited to two pieces of equipment with an installed Li-ion battery that meets the above size/rating limitation.

- Lithium metal batteries containing two (2) grams or less of lithium content (one (1) gram or less for single cell). There is no "per shipment" limit on the number of lithium metal batteries installed in equipment that can be shipped in personal effects shipments providing they meet the above size/content limitation.

7. DETERMINING LITHIUM BATTERY SIZE AND ENERGY LEVEL: Battery size and energy level, such as the Wh rating, is typically printed on the battery. Additionally, battery information is often easily found on the Internet by searching the make and model of the device containing the battery. The Wh rating is computed by multiplying the battery volts (V) by the battery ampere-hour’s (Ah) to determine watt-hours. If the battery has a milliampere annotation, often written as mAh, divide the mAh by 1000 to convert to Ah. For example, a lithium-ion battery with 3500 mAh would be equal to 3.5 Ah. For lithium metal batteries, the lithium gram content is easily computed by taking the Ah rating and multiplying by .3 to get the lithium content.

8. PROHIBITION OF LITHIUM BATTERIES IN STORAGE SHIPMENTS: Lithium batteries of all types, sizes, and energy levels are prohibited in personal effects shipments destined to long-term/permanent storage. If any shipment is rerouted to or converted to long-term/permanent storage after pack-out, the employee will be required to identify the device(s) on the inventory that contain lithium batteries and provide disposition instructions

for the removed lithium batteries. In cases where the lithium battery is not removable, the employee will be required to provide disposition instructions for the entire device(s).

9. PROHIBITED LITHIUM BATTERIES: The following batteries are not allowed in any employee personal effects shipment:

- Stand-alone/loose batteries/spare batteries (any size) not installed or contained in the equipment. This includes portable lithium powered power banks used to charge cell phones and other small lithium powered devices.

- Batteries over the 100-watt-hour size and energy level. NOTE: Large lithium batteries found in e-bikes, scooters, hoverboards, and large lawn equipment (e.g., riding lawnmowers) far exceed the 100 Wh limitation.

NOTE: Air and ocean carriers can enforce supplemental policies and/or limitations with respect to lithium battery shipments that may be more restrictive than the State Department policy. Even if the number of incidents may seem low to you, the carrier may consider the risk of catastrophic damage, injury, or death to be too great. End note.