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Environmental Update

Regulatory Alert: Spent Lithium-Ion Batteries Likely Hazardous Waste Under RCRA

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The U.S. Environmental Protection Agency (EPA) recently published a guidance memorandum addressing how hazardous waste regulations apply to lithium-ion batteries, one of the most commonly used types of batteries in the United States. Importantly, EPA states that lithium-ion batteries are likely hazardous waste when disposed of, but that the batteries may be managed as universal waste until they reach a destination facility for recycling or to be discarded.

The requirements for disposal of lithium-ion batteries have broad applicability, as countless businesses rely on lithium-ion battery powered devices in their operations – from a wide range of rechargeable handheld devices to power tools to electric forklifts and vehicles. Any company that uses lithium-ion batteries will eventually need to dispose of them at the end of their lifecycle, whether because they no longer hold a charge or because the device they powered is no longer useful or in service. All such companies are affected by the rules addressed in EPA's memorandum. Critically, this may include companies that do not otherwise generate hazardous waste and that are otherwise unfamiliar with hazardous waste management responsibilities.

EPA's memorandum addresses issues beyond disposal of spent lithium-ion batteries and provides guidance to businesses that collect or recycle lithium-ion batteries. However, this article focuses primarily on the disposal of the batteries, which affects a much larger set of businesses.

Hazardous Waste Regulation of Lithium-Ion Batteries

Waste material can be classified as hazardous either because it has been specifically designated as such by EPA or it has the characteristics of hazardous waste, which is determined by whether it is toxic, ignitable, reactive or corrosive. Although lithium-ion batteries can vary in their composition, EPA states that most are likely to be hazardous waste when disposed of because of their ignitability or reactivity. Whether an item or substance is ignitable is determined by a specific test, while reactivity is less specifically defined but does include materials that are capable of detonation or explosive reaction even at normal temperatures and pressures. Lithium-ion batteries have gained an infamous reputation for sometimes igniting or exploding, which is consistent with EPA's view that such batteries are likely to be hazardous.

In its guidance memorandum, EPA clarifies that generators of lithium-ion battery waste (typically the businesses using the batteries) are responsible for determining whether the spent batteries are hazardous waste and managing those batteries under the hazardous waste requirements. Because the design and application of the batteries can vary, EPA recognizes it may be difficult for a generator to determine whether its batteries are hazardous waste at end-of-life. For this reason, EPA recommends that businesses manage all used lithium-ion batteries as hazardous waste under the universal waste regulations, a subset of hazardous waste management standards for select categories of hazardous waste, which includes batteries.

EPA's comment in this respect is prudent advice. In almost all situations, it will be more efficient and protective for businesses to handle their used lithium-ion batteries as hazardous waste rather than attempting to make individual determinations of whether any particular battery does or does not qualify as such.

Lithium-Ion Batteries as Universal Waste

RCRA's universal waste regulations apply to five categories of common hazardous waste: batteries, pesticides, mercury-containing equipment, lamps, and aerosol cans. They provide streamlined hazardous waste management requirements that can differ depending on whether a handler of universal waste accumulates more or less than 5,000 kilograms of total universal wastes on-site at a single time. Those that accumulate less than 5,000 kilograms are known as small quantity handlers, and those that accumulate 5,000 kilograms or more are known as large quantity handlers.

Universal waste is not fully regulated hazardous waste because it is exempt from some hazardous waste requirements. This makes handling universal waste, as opposed to other hazardous waste, less onerous for businesses. While interrelated, the universal waste and hazardous waste rules are ultimately independent sets of standards that a facility must carefully consider to ensure it is in compliance with RCRA. Among other things, the universal waste and hazardous waste rules include different thresholds for establishing the handler/generator category, which in turn affects the stringency of the regulations that apply to the facility. Importantly, universal waste does not count towards a facility's calculation of the hazardous waste it generated in a given month when determining its waste category (i.e., whether a facility is a small or large quantity generator of hazardous waste).

Although the universal waste requirements are often the same or similar for all regulated sources, large quantity handlers, unlike small quantity handlers, must, among other things, obtain an EPA identification number and keep basic shipping records when shipping or receiving universal waste. The rules generally require that businesses without a storage permit not store waste for longer than one year, unless for proper recovery, treatment or disposal, and that personnel receive basic training on proper handling and emergency procedures related to the waste.

Businesses may only ship lithium-ion battery waste to another universal waste handler, a destination facility that treats, disposes of, or recycles the batteries, or a foreign destination. Businesses must also follow Department of Transportation (DOT) regulations when shipping the batteries. International shipments managed as universal waste must also comply with RCRA regulations for import and export.

In its memorandum, EPA specifies that broken or damaged lithium-ion batteries may only be managed as universal waste if the damage does not breach the individual cell casing, so facilities should be careful to ensure the proper handling of broken or damaged batteries. If a lithium-ion battery is damaged in such a way that the cell casing is breached, the battery must be managed as fully regulated hazardous waste.

Recycling of Lithium-Ion Batteries

If used lithium-ion batteries are no longer useful to a business but still have commercial value, they may not need to be treated as waste. Lithium-ion batteries that are legitimately reused in another similar device or repurposed into another application are not solid waste under RCRA's use/reuse exemption, which applies when a handler determines there is a reasonable expectation of use or reuse. For lithium-ion batteries, EPA clarifies in its memorandum that this may occur when the battery provides a useful contribution to a product, is a valuable product, and is managed as a valuable commodity. Accordingly, electronics from businesses are not considered solid wastes when sent to resellers for reuse, repurposing, and/or repair and therefore are not subject to RCRA

regulations. A lithium-ion battery becomes a solid waste when the handler makes the decision to discard it, at which point the battery must be managed under the universal waste or hazardous waste regulations.

End of Life Considerations

A lithium-ion battery is no longer a universal waste and instead becomes a fully regulated hazardous waste when it arrives at a destination facility for recycling or disposal. In its memorandum, EPA provided several best management practices for handlers that store end-of-life lithium-ion batteries to protect against thermal runaway and fire. Such practices include safety training for employees, storing batteries in climate-controlled spaces and in buildings away from other flammable materials, installing advanced fire detection systems, and maintaining a plan for emergency response and evacuation.

EPA urges facilities to consult their state and local battery management or recycling permitting requirements, which may be more stringent than the federal RCRA regulations.

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This Environmental Update is intended to keep readers current on developments in the law. It is not intended to be legal advice. If you have any questions, please contact David Rockman at 412.566.1999 or drockman@eckertseamans.com, Jessica Rosenblatt at 412.566.1911 or jrosenblatt@eckertseamans.com, or any other attorney at Eckert Seamans with whom you have been working.