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New Guidance from EPA Finds Spent Li-Ion Batteries Are "Hazardous Waste" Under RCRA

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Already among the most widely used battery chemistry, lithium-Ion (Li-Ion) batteries are experiencing a rapid increase in use and demand. A growing number of these energy-dense batteries are being manufactured and used in everything from electric vehicles (EV) to scooters and personal, consumer electronics.

But can spent Li-Ion batteries be hazardous waste? The US Environmental Protection Agency (EPA) now says yes.

A recent guidance memorandum from EPA's Office of Resource Conservation and Recovery clarifies important requirements for generators of Li-Ion battery waste. The May 24, 2023 memorandum concludes that under the Resource Conservation and Recovery Act (RCRA) Li-Ion batteries generally qualify as "hazardous waste" at their end of life due to their ignitability and reactivity characteristics. EPA qualified its determination with the term "generally" after acknowledging there is a wide range of Li-Ion battery chemistries, and that not all are the same.

EPA's determination comes as both state and federal policymakers are attempting to create more battery recycling programs in response to the increasing demand for EVs and other battery-based products. The characterization of spent batteries has a major impact on entities who dispose of Li-Ion batteries, as well as entities involved in battery end-of-life management activities, including storage and recycling.

EPA's memorandum explains that most Li-Ion batteries, which are widely used in electric vehicles and various household appliances, are likely hazardous waste at end of life and can be managed under the hazardous waste management standards for universal waste found at 40 C.F.R. Part 273 until they reach a destination facility for recycling or discard. The universal waste standards of Part 273 are designated for certain hazardous wastes that are generated by a variety of establishments and are intended to streamline the collection of such hazardous wastes for proper management at hazardous waste recycling entities or permitted treatment, storage, or disposal facilities. Once the spent batteries reach a destination facility for recycling or discard, however, they must be treated as fully regulated hazardous waste.

Household vs. Commercial Generators

The EPA memorandum expressly states that Li-Ion batteries generated in households and household-like areas are freed from RCRA obligations under the household hazardous waste exemption. Spent batteries generated at places like dealerships, auto shops, scrap yards, or similar types of facilities, however, are not exempted from the regulations. As an example, an EV battery being changed at home by its owner would not be subject to the RCRA regulations, but EV batteries removed at dealerships or auto shops would be subject to them. Consumers, therefore, likely will not have any additional responsibilities under EPA's new guidance, but they may have additional costs to pay.

However, waste generators, such as dealerships or auto shops, will likely have added responsibilities under the EPA memorandum. While waste generators always have an obligation to evaluate whether their waste is hazardous under RCRA, they should now expect to conclude that any Li-Ion batteries they discard qualify as hazardous waste. Once determined that a given spent Li-Ion battery is a hazardous waste, generators will need to follow the applicable requirements of "universal waste" under 40 C.F.R. Part 273. These requirements include standards for employee training, labeling containers, limits on how long such waste may be accumulated at a site before being shipped for disposal or recycling, and requirements relating to shipping.

Recyclers

The EPA memorandum explains that battery recycling facilities generally do not need to obtain RCRA permits in order to conduct recycling operations. EPA cautions recyclers to not store spent batteries prior to recycling them without a permit. EPA also cautions that certain air emission requirements may apply to recycling operations and that recyclers must comply with the general recycling requirements of 40 C.F.R. Part 261.6.

The memorandum notes that most states have delegated authority to implement their own RCRA programs, meaning that states have the power to impose more stringent requirements than the federal requirements. Accordingly, generators, recyclers, and any other entities who manage spent Li-Ion batteries should carefully evaluate relevant state requirements as well.

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