

FALL 2023



Lithium-Ion Batteries and Sara Tier II Reporting

SARA Tier II reporting is just around the corner! Per the Emergency Planning and Community Right-to-Know Act (EPCRA), Sections 311-312, all facilities are required to report chemicals that exceed the Threshold Planning Quantities (TPQs) by March 1 of every year. For most chemicals, the TPQ is 10,000 lbs., except for Extremely Hazardous Substances (EHS) which have a lower threshold of 10 to 500 lbs. ([The U.S. EPA \(USEPA\) List of Lists can be found here stating the TPQ for chemicals of interest.](#))

As you prepare your SARA Tier II report, one item to keep in mind: Lithium-ion batteries. With more plants now using equipment powered by lithium-ion batteries, it is important to understand the hazards as well as the reporting requirements. As lithium batteries become more popular, the threshold amount may be exceeded before you realize it. Unlike traditional fork truck batteries, lithium-ion batteries do not contain sulfuric acid (an EHS) and experience less malfunctions after manufacturing. However, lithium is on the EPCRA list, and when they do malfunction, lithium-ion batteries are flammable and difficult to extinguish. It is recommended to store different types of batteries in different locations for this reason. (See the [Spring edition of Hixson's EH&S From Experience](#) for additional details on lithium-ion battery safety.)

From a reporting perspective, the TPQ for lithium-ion batteries is at the 10,000 lbs. threshold, but due to the challenging fires that result from these batteries, where hydrogen gas can be emitted if water is used on the fire, it is recommended that companies report ALL quantities on their SARA Tier II report. This can be done one of two ways:

- **Reporting as a Mixture:** The quantity is determined by multiplying the total weight of a battery by the number of batteries onsite, as shown in the following table:

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EXPERIENCE IN BRIEF

USEPA regulates Chlorofluorocarbon (CFC) and Hydrochlorofluorocarbon (HCFC) compounds used in industrial process refrigeration under 40 CFR Part 82 due to their contribution to ozone layer depletion. Recently, USEPA has increased inspection and enforcement activities related to the servicing and recordkeeping activities surrounding refrigeration systems containing regulated CFC/HCFC compounds. Keep in mind, though, that as of 4/10/2020, the requirements of 40 CFR Part 82 (Repairs, Inspections, Reporting, Leak Rate Calculation, and Recordkeeping) do not apply to Hydrofluorocarbon (HFC) compounds (substitute refrigerants).

Battery Type	Quantity at Facility	
Forklift (Small) – 375 lb. batteries	10 batteries	10 x 375 = 3,750 lbs.
Forklift (Large) – 750 lb. batteries	6 batteries	6 x 750 = 4,500 lbs.
Process Equipment – 2,500 lb. batteries	4 batteries	4 x 2,500 = 10,000 lbs.
TOTAL		18,250 lbs.
<i>Hazardous Chemical Threshold</i>		10,000 lbs.

- **Component Reporting:** As shown in the following example, the quantity is calculated for each substance present in the battery when referring to the composition (section 3) on the Safety Data Sheet. (If the substance percentage is a range use the highest value listed in calculations.)

Battery Type	Total Weight	% Lithium	Lithium Total
Forklift (Small) – 10 @ 375 lbs. batteries	3,750 lbs.	45%	3,750 lb. * 45% = 1,685 lbs.
Forklift (Large) – 6 @ 750 lbs. batteries	4,500 lbs.	45%	4,500 lb. * 45% = 2,025 lbs.
Process Equipment – 4 @ 2,500 lbs. batteries	10,000 lbs.	45%	10,000 lb. * 45% = 4,500 lbs.
TOTAL			8,200 lbs.
<i>Hazardous Chemical Threshold</i>			10,000 lbs.

As seen in the examples above, reporting as a mixture rather than the component amount for lithium-ion batteries is more likely to be over the 10,000 lbs. threshold. Although this is the case, if reporting by component and the total is under the 10,000 lbs. threshold, lithium-ion batteries should still be added to the Sara Tier II report. Regardless, the reporting method used should be consistent with how all other chemicals are being reported. Remember too that each state has different requirements and procedures for reporting, so [check with your local agency for guidance](#).

RELATED CONTENT

- [EPA Periodic Requirements: Be Prepared!](#)
- [Lithium-Ion Battery Safety: What the Code Does...and Doesn't...Say](#)

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