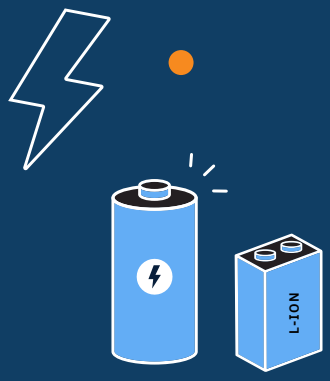
ENCAMP

The Ultimate Guide to Compliance Reporting for Lithium-Ion Batteries

Compared to its lead-acid battery counterpart, a lithium-ion battery is 95% more efficient - yet equally as hazardous to the environment. One misstep could lead to catastrophic events that bring harm to the community and environment. However, lithium-ion batteries tend to be included on EPCRA Tier II reports far less frequently, due to the fact that many EHS professionals are still left with questions on how best to comply with SDS and Tier II reporting requirements.



Follow this step-by-step guide to master compliance reporting for lithium-ion batteries like a pro.

1 Check if your product is exempt from reporting

Some lithium-ion batteries may qualify for “consumer product exemption” under EPCRA Section 311. If lithium-ion batteries are intended to be distributed for use by the general public or are in the same form and concentration as a consumer product, then those batteries are exempt from Tier II reporting.

What to do: To determine whether any lithium-ion batteries at a facility are exempt from Tier II reporting, **consider if they’re in the same packaging and concentrations as lithium-ion batteries sold for personal use.** If there is any doubt about whether an exemption applies at a specific facility, be sure to err on the side of caution and report the batteries as a chemical.

Do you need to prepare a Tier II report?

DON’T NEED TO REPORT	REPORT
Batteries that the maintenance department uses to power their cordless drills, because these are sold for use by the general public (i.e., the same batteries available for purchase at a hardware store.)	Batteries used to power forklifts, because these are not sold for use by the general public.

2 Stay one step ahead in determining chemical thresholds

At the federal level, lithium-ion batteries have a reporting threshold of 10,000 pounds. However, a handful of states have lower thresholds for these batteries. Louisiana has a hazardous chemical reporting threshold of just 500 pounds, while some cities like Gilbert, Arizona impose stricter requirements than its state counterpart.

What to do: It’s important to determine the appropriate requirements for a specific state or county a facility is in early on in the process. Contact your State Emergency Response Commission (SERC) for specific information.

“You can get on your state regulator’s mailing list and keep an eye out for Tier II webinars or training sessions as reporting season approaches. On a local level, subscribe to your LEPC’s meeting minutes, or better yet, join your LEPC! They’re always happy to have local industry get involved and attend meetings.”

Jackie Velazquez

Director of Environmental Compliance, Encamp

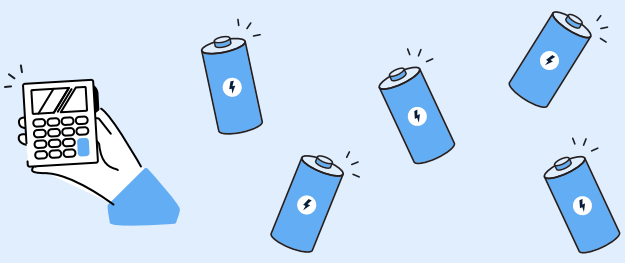
3 Prioritize accuracy when calculating chemical thresholds

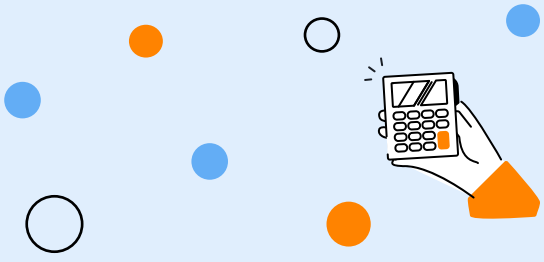
After determining the need to submit a Tier II report, the next step is to quantify the amount of lithium-ion batteries at a facility and compare it to the state or county’s reporting threshold.

What to do: There are two options when calculating the chemical threshold for lithium-ion batteries: **Mixture Reporting and Component Reporting.**

What is Mixture Reporting and Component Reporting?

MIXTURE REPORTING	COMPONENT REPORTING
If individual chemical ingredients are not known, calculate the total quantity of lithium-ion batteries present throughout the facility at any one time.	**If each individual chemical component in the lithium-ion battery can be identified,** calculate the total quantity of each component present in all mixtures.





4 Understand the difference in complexity between Mixture and Component Reporting

In nearly every situation, it is much easier and appropriate to report lithium-ion batteries as a mixture because it is significantly easier to perform the threshold determination and the information presented in this manner is more useful to first responders.

What to do: It's important to **review how EPCRA Section 311 obligations were fulfilled for lithium-ion previously.** If a facility has previously reported lithium-ion batteries as a mixture, then they must report in the same manner on their Tier II report. The opposite is also true - if they previously reported as a component, then they must do the same on their Tier II report.

Formula for Quantifying as a Mixture

Weight of Batteries in a Facility X Quantity of Batteries in a Facility

Battery Type	Quantity at Facility	
Forklift (Small): 375 lb. batteries	10 batteries	10 x 375 = 3750 lb.
Forklift (Large): 750 lb. batteries	6 batteries	6 x 750 = 4,500 lb.
Process Equipment: 2,500 lb. batteries	2 batteries	2 x 2,500 lb = 5,000 lb.
TOTAL		**13,250 lb.**
Indiana Hazardous Chemical Threshold		**10,000 lb.**

13,250 lb. > 10,00 lb. Lithium-ion batteries need to be reported at this facility.

Formula for Quantifying as a Component

Total Weight of Batteries in a Facility X Percentage of Chemical Component in each Battery

Battery Type	Total Weight	% Copper	Copper Total
Forklift (Small): 10 @ 375 lb. batteries	3,750 lb.	15%	3,750 lb. x 15% = 563 lb.
Forklift (Large): 6 @ 750 lb. batteries	4,500 lb.	15%	4,500 lb. x 15% = 675 lb.
Process Equipment: 2 @ 2,500 lb. batteries	5,000 lb.	15%	5,000 lb. x 15% = 750 lb.
Copper Shot, Raw Material Storage Area: 25 bags @ 200 lb. per bag	5,000 lb.	100%	5,000 lb. x 100% = 5,000 lb.
Carbon Steel Blanks, Raw Material Storage Area: 1 pallet @ 1,500 lb. per pallet	1,500 lb.	1%	1,500 lb. x 1% = 15 lb.
6" diameter 5' copper Tube, East Yard: 60 tubes @ 70 lb. per tube	4,200 lb.	100%	4,200 x 100% = 4,200 lb.
TOTAL			**11,203 lb.**
Indiana Hazardous Chemical Threshold			**10,000 lb.**

11,203 lb. > 10,00 lb. Copper would need to be reported at this facility.

5 Properly communicate chemical and hazardous details in a Tier II report

Although Tier II reporting requirements will vary by state or county, filling in chemical and hazard details remain the same for Tier II reports. It's most important to remember that **providing the most updated and accurate information will help first responders and emergency planners the most.**

What to do: Now that the quantity of reportable lithium-ion batteries and applicable thresholds have been determined, the last and most important step is adding it to a Tier II report.

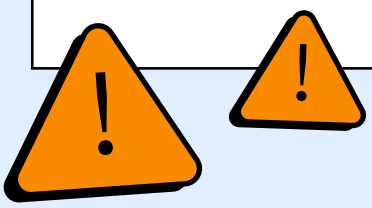
Chemical Details Checklist

- Check as Mixture
- EHS marked as No
- CAS Number should be marked as N/A
- Physical State is marked as Solid

Chemical physical and health hazards can be found in your safety data sheet (SDS). For any given facility, it's important to regularly update site maps and SDSs that contain vital information about hazardous chemical substances and how to safely handle them, to protect the community and the environment from any catastrophic events.

Typical hazards of lithium-ion batteries as marked on a Tier II Report

PHYSICAL HAZARDS	HEALTH HAZARDS
• Explosive • Flammable • Self-heating	• Acute toxicity • Skin corrosion or irritation • Serious eye damage or eye irritation • Respiratory or skin sensitization • Carcinogenicity • Specific target organ toxicity



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