

# Understanding Battery Thermal Runaway Risk



Energy Storage Systems, EV Battery packs, or Battery modules provide their own unique safety challenges. However, understanding thermal runaway risk of the individual cells is vital in ensuring the safety of the system.



**A single cell can start a chain reaction that consumes the entire pack.**

Have you assessed the stability of your component cells?

## Causes

- Internal cell short circuit
- Battery Damage
- Over voltage
- Overcharge
- Overdischarge
- Overcurrent
- External heating

## Temperature Increase



Thermal Runaway

## Consequences



Off Gas (explosives/toxic)



Fire

Battery ARC testing can provide specific data on when cells enter thermal runaway (TR). Batteries are exposed to TR causes such as external heating or nail penetration. This forces the cell to enter TR, and the heat generation rate and inflection point are identified. The ARC also captures gas generation rate data, which is critical in identifying when flammable or toxic gas generation occurs. With this comprehensive data package, you can build a better understanding of the TR risk posed by your cells.



**Talk to a battery testing expert today!**

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