REPORT

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Reference
P127755b (short summary)

MINERALKA d.o.o.
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Slovenien

Thermal runaway propagation prevention test report for Raclan Battery Safety System (RAMBSS)

A test was carried out on 6 Feb 2026 in a fire hall known as Abuse 4 at Battery Safety Laboratory, located on the RISE campus in Borås, Sweden.

The test was conducted following the guidelines as per UL9540A and UL1487 to obtain thermal runaway (TR) and propagation using a 5.1–5.2 kWh module built with 576 battery cells: conducted to assess the performance of the gas-detection system, cooling system including water-flooding functionality, pressure-relief panel, structural integrity of the cabinet, and the capability to capture harmful gases such as hydrogen fluoride and gaseous hydrocarbons built in the cabinet known as RAMBSS. The test details are presented in the P127755b (full report).

Findings: The following findings are based on a single-cell failure and subsequent TR. The module was installed inside a cabinet equipped with a gas/smoke detection system, a cooling agent, and a water-supply system.

- The gas-detection system successfully identified the gases released during the TR event and triggered the cooling and water-supply systems. The activation of these systems resulted in the cabinet being filled with the cooling media, effectively preventing thermal-runaway propagation to adjacent cells however, the leakage of water was observed from the cabinet.
- In a 10 m³ room, the release of 86 mg of CO and 651 mg of CO_2 from the TR, leads to concentrations well below established health-risk thresholds. Short-term exposure under these conditions is considered safe; however, normal ventilation is recommended.
- The functioning of the pressure release panel and structural integrity of the cabinet was observed as expected.

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Confidentiality level
C2 - Internal

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