

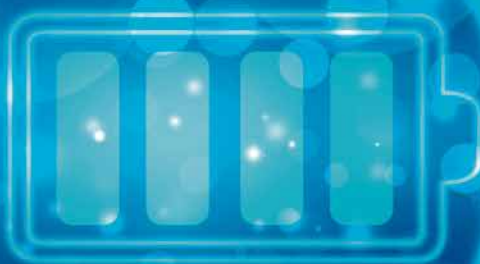
Hidden LAS

Leak Analysis System

Automated
battery
leak testing

Energy storage is increasingly important in modern life. As our reliance on battery powered devices increases, lifetime and performance are critical features of the technology.





Battery failure rate and lifetime are dependent on contamination of the battery remaining at a minimum. Therefore battery leak tightness is vitally important to ensure that no electrolyte can escape from the sealed battery or other gases can enter the battery. Leaking electrolyte can cause numerous safety issues due to the flammable nature of the battery components whereas ingress of air will lead to shorter battery lifetime as water vapour contaminates the battery. Even a few ppm of water can cause deterioration of battery performance.

While direct contact with water can lead to contamination of the electrolyte, water vapour in the air can also enter the battery cell if it is not leak-tight, and build up to a dangerous point. To ensure water vapour does not enter the battery cell, the maximum allowable leak size is 1×10^{-6} mbar.l/s, which is

detectable only with specialised leak-detection equipment such as a mass spectrometer connected to a vacuum test chamber containing the battery.

To ensure leak tightness and that the electrolyte in the battery cells doesn't escape or interact with water, battery manufacturers must use leak-testing techniques to test battery packs and even individual battery cells during manufacturing and assembly.

The Hiden Leak Analysis System is automated for simple use in quality control or R&D environments and is designed for analysing the leak tightness of small to medium size battery assemblies.

The system can detect leak rates of less than 1×10^{-7} mbar.l/s with self calibration checks against known leak rate standards.

Key Features:

- ▶ Automated operation
- ▶ High throughput
- ▶ Dry, contamination free testing method
- ▶ Highly sensitive
- ▶ Non-destructive testing

