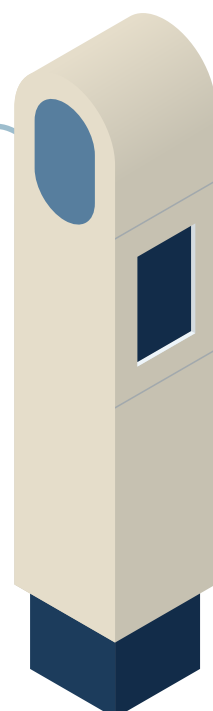


Five trends and safety considerations for the future of automotive

As the automotive industry evolves to meet demand for enhanced mobility, lower costs, and improved safety and sustainability, consumer demands are pushing it even further. For example, drivers want quicker charging electric vehicles (EVs) that cover longer ranges. All the while, original equipment manufacturers (OEMs) are dealing with material and component shortages and more stringent material and systems testing and certification requirements. Here are key trends and safety considerations for the future of automotive.



EV thermal runaway hazard

1

Problem:

Larger lithium-ion batteries can experience thermal runaway, which occurs when the cell enters an uncontrollable self-heating state that can produce fire, smoke, extremely high temperatures and cell venting (the ejection of gas, shrapnel or particulates).

Solution:

Using UL 2596, the Test Method for Thermal and Mechanical Performance of Battery Enclosure Materials, our Torch and Grit (TaG) and Battery Enclosure Thermal Runaway (BETR) tests can screen for the performance of different battery enclosure materials in response to a thermal runaway event.

EV infrastructure risks

Problem:

Quicker charging sessions increase the electric current and voltage transferred from the charging station through the EV charging cable to the vehicle, which can increase the safety risks.

Solution:

Testing and certification to UL 2263, the Standard for Electric Vehicle Cable, can help car manufacturers and OEMs meet EV high-voltage safety requirements.

2

Wiring harness compliance

3

Problem:

Before going to market, wiring harness suppliers need to validate all crimps against the United States Council for Automotive Research (USCAR) USCAR-21, Performance Specification for Cable-to-Terminal Electrical Crimps.

Solution:

The new UL Solutions laboratory in Querétaro, Mexico, offers validation testing against USCAR-21, simulating the stress seen in a typical life for a crimp connection and assessing whether the crimp complies with performance requirements.

Appliance wire material (AWM) compliance

Problem:

While the automotive industry demands continued innovation around the types and styles of wiring for various applications, safety and performance must still be considered.

Solution:

Our global testing and certification services help assess compliance to ANSI/UL 758, the Standard for Safety for Appliance Wiring Material.

4

Supply chain disruption

5

Problem:

Shortages of microchips, semiconductors, electronic components and other materials used in vehicles have a negative impact for automotive OEMs on car production and logistics.

Solution:

UL Prospector® helps material and component manufacturers and suppliers find and source approved automotive plastics, plastics additives, metal parts and other alternative materials from thousands of global suppliers to help minimize supply chain disruption.

