



Charging ahead with safety



Why and how to certify charging cable safety

From smart phones to disk drives, USB cables and connectors help power many types of information and communication technology (ICT). But with the evolution of faster, more powerful devices comes safety risks. What are the risks and how can manufacturers build consumer trust in their cable products?

1 What can go wrong?

Users are not typically aware of the potential risks associated with power cables and nonstandard use.

Safety hazards include:

- Slow charging rates
- Failure of devices to function as intended or expected
- Overheating
- Damage that could lead to the increased risk of smoke and fire



Causes include:

- Slow charging rates
- Poorly designed or faulty cables
- Improperly terminated connectors
- Use of substandard or insufficient materials
- Incorrect use of electronic marker (e-marker) to identify power requirements
- Noncompliant devices and cables
- “Cheater cables” that bypass established safety measures
- Consumer confusion about the meaning of cable logos and marketings



UL conducted cable flame tests on a random set of USB cables purchased on the open market. **Less than 28%** of the cables tested passed the flame test, and many of the tested samples were completely consumed by fire. ¹

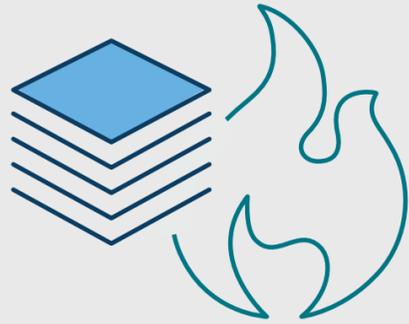


2 What can be tested?

To address potential Information and Communication Technology (ICT) cable safety concerns, UL has prepared UL 9990, **Outline of Investigation for Information and Communications Technology (ICT) Power Cables**.

The Outline assesses the following:

- Marked cable assemblies
- Material flammability
- Strain relief and flexing
- Dielectric voltage-withstand
- Temperature
- Fault current
- Production-line continuity



3 Why independent certification is important

Independent certification offers manufacturers a number of market advantages. With UL's Power Cable Safety Certification program, benefits include:

- Comprehensive, single-source, third-party testing
- Incorporated compatibility and safety considerations
- Ongoing assessment of compliance
- Intensive anti-counterfeiting efforts to protect safety certification marks
- Globally recognized certification



Find more insights on power cable safety in our white paper: **Powering and Charging Safety for Data Sync and Charger Cables**.

For more information about ICT power cable testing and UL's ICT Power Cable Safety Certification program, please visit [UL.com/offerings/wire-and-cable](https://www.ul.com/offerings/wire-and-cable).



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¹ UL (2017). Powering and Charging Safety for Data Sync and Charger Cables [White paper].