Why does battery heat, fire, and explode? What will happen under such phenomenon?

Secondary battery environmental test:
- Lithium-ion battery advantages:
  - Small size
  - Its action voltage is 3 times higher than nickel cadmium battery and nickel metal hydride battery, so the machines need only equipped with a few batteries, small size and portability
  - Energy density, with the same capacity, its weight is only half of the nickel cadmium battery and nickel metal hydride batteries, its volume just 20 to 50% of them
  - Continuous charge can be charged and discharged under any condition and stock reservoir which will not reduce energy capacity to continuous charging
  - Safety and environmental protection: Over-charging ability and over-thermal safety.
    - No cadmium, lead, mercury, etc.

Lithium-ion battery test:
- Low/High Temperature Performance Test:
  - Charge or discharge under different environmental temperature to check secondary battery performance under such temperature conditions
  - Temperature requirement: any point from -30~30°C (according to the temperature range of battery type and usage)

- Preservation Test:
  - Under specific environment to long-time use battery and test battery leakage and safety performance
  - Temperature requirement: any point from -10~70°C (according to the temperature range of battery type and usage)

- Charge/Discharge Test:
  - Under specific environment to charge/discharge battery repeatedly and check every battery performance
  - Temperature requirement: any point from -30~30°C (according to the temperature range of battery type and usage)

- Transport Test:
  - Simulate air transport, road transport (UN) specifications
  - Vibration requirement: 7~18Hz/1G, 18~200Hz/8G, 1.6, mmp-p
  - Impact and shock requirement: acceleration 150G and maintain 6s on peak value

- Burn somebody directly or decrease the insulation performance of components, security and make the flammable liquid ignition.
  - Burn somebody directly, or may cause products with battery fire.
  - Harm somebody directly or damage equipment.