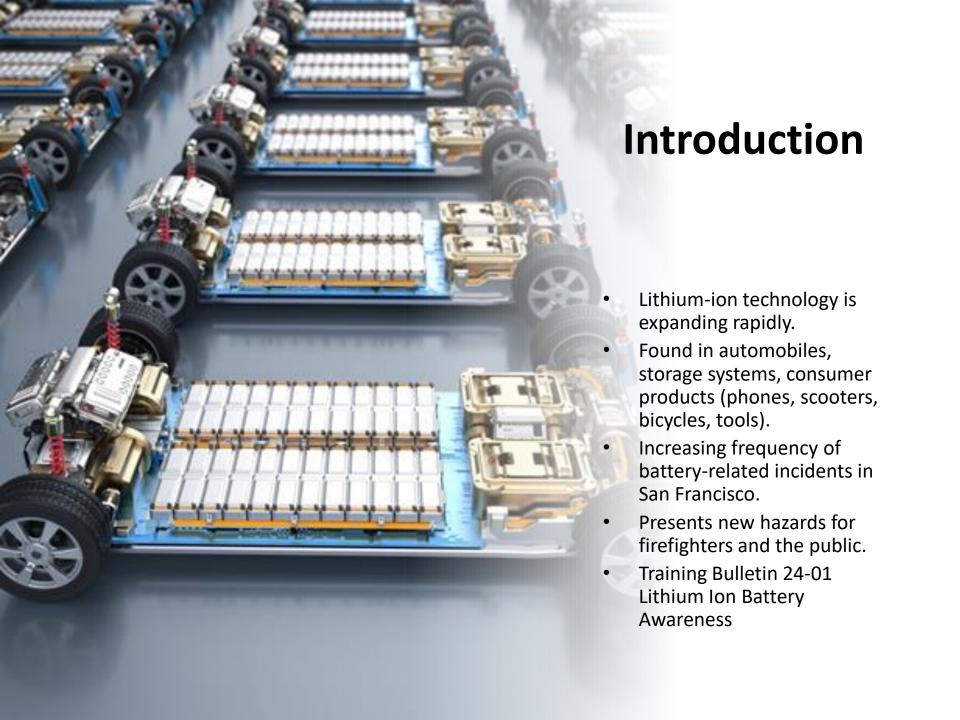




Lithium-Ion Battery Fires





Key Hazards (1 of 2)

- Toxic Atmosphere: Release of hydrogen fluoride, phosphorus pentafluoride, phosphyl fluoride.
- Severe respiratory and systemic health risks.
- High Heat Release: Fires reach up to 3,000°F.



Key Hazards (2 of 2)

- Unique Combustion Properties: Lithium can burn without oxygen.
- Explosion Potential: Hydrogen gas buildup creates explosion hazard, especially in confined spaces.
- Thermal Runaway: Rapid, uncontrollable chemical reaction.
- May occur seconds to days after damage.
- Reignition possible up to 21 days post-incident.

Safety Considerations

- Toxic gases released within 2–3 seconds of failure.
- Inhalation hazard often exceeds fire hazard.
- Explosion potential is a primary concern.
- Department Policy:
- Firefighters shall not operate in immediate hazard area without:
- Positive-pressure respiratory protection
- Full structural PPE



Evolving Technology

- Lithium-ion batteries are constantly evolving.
- Hazards and failure mechanisms remain under study.
- SFFD is:
- Monitoring research
- - Collaborating with peer agencies
- Updating best practices and training





Closing

- Lithium-ion fires are a growing public safety challenge.
- Require adapted tactics, training, and resources.