

LOUIS PRETORIUS

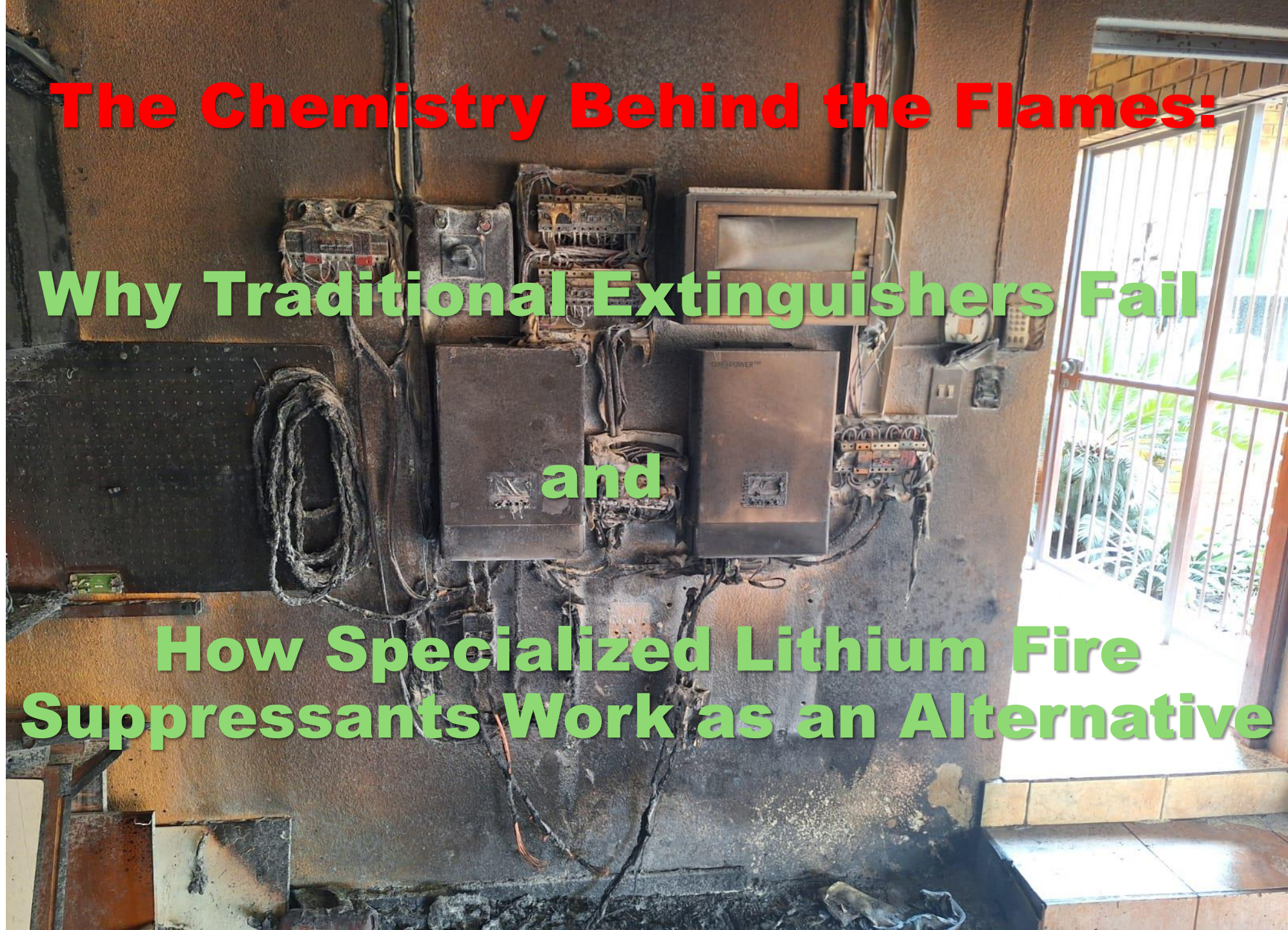


The Chemistry Behind the Flames:

Why Traditional Extinguishers Fail

and

**How Specialized Lithium Fire
Suppressants Work as an Alternative**



What is Lithium?

[illegible]

Lithium Battery Fire Safety

From Risk to Response



THIS WAS
COSTLY





Agenda

- Exploration of traditional extinguisher failures
- In-depth look at lithium-ion fire risks
- Strategies for safe lithium battery installations
- Challenges and solutions for extinguishing lithium fires
- Public awareness and future trends in fire safety

Understanding Lithium-Ion Fire Risks

- Lithium-ion batteries pose significant fire risks due to their energy density
- Chemical components like lithium and cobalt contribute to fire hazards
- Thermal runaway can lead to devastating fires that are hard to extinguish
- Identifying warning signs is crucial for preventing fire incidents

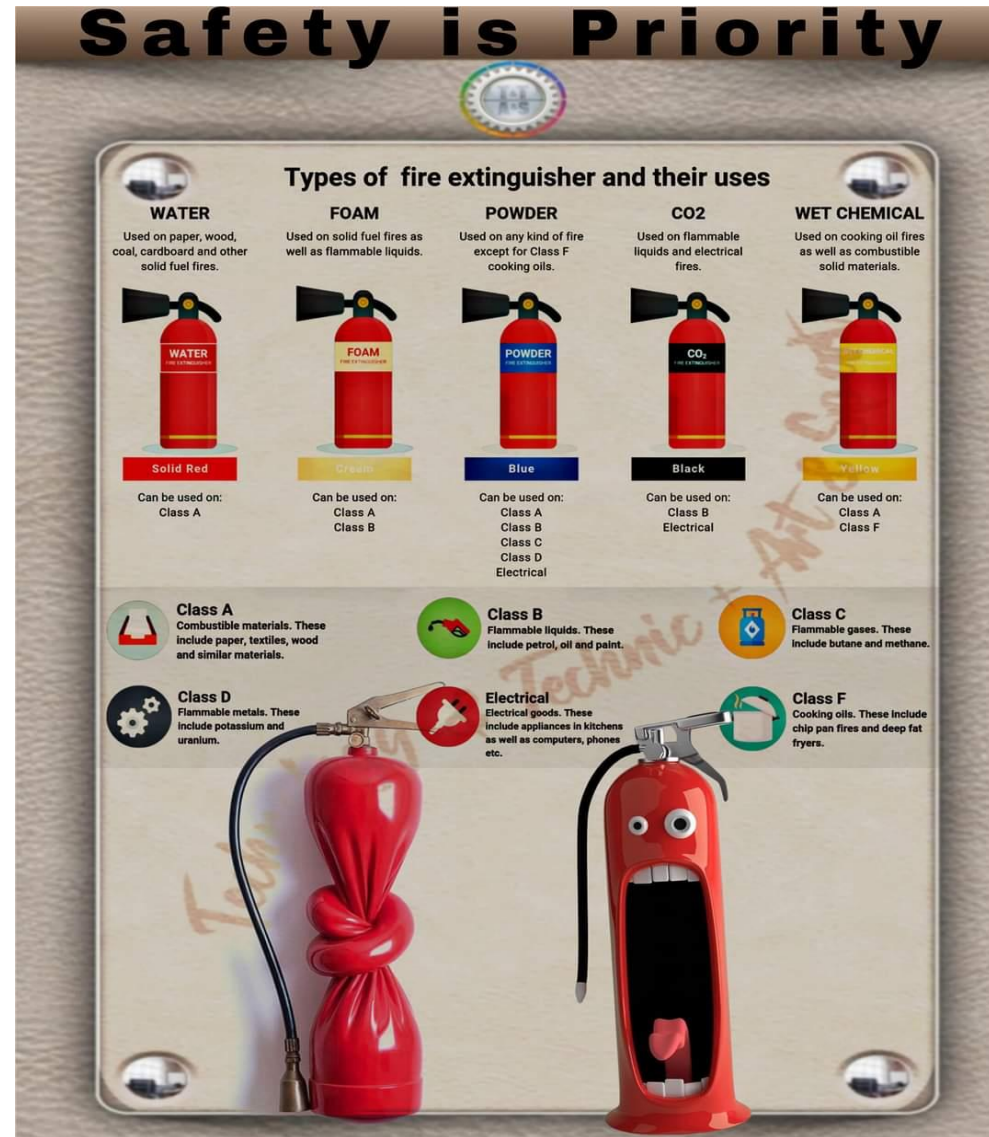


Why Lithium Battery Fires Differ from Conventional Fires

- Lithium fires can create their own oxygen, complicating extinguishing efforts
- Thermal runaway leads to self-sustaining heat generation
- Lithium reacts explosively with water, making common methods ineffective
- These fires can reignite even after initial suppression efforts
- Extinguishing lithium fires requires specialized knowledge and equipment



Why Lithium Battery Fires Differ from Conventional Fires





The Role of Specialized Lithium Extinguishers

- Class D extinguishing agents are specifically designed for metal fires
- Encapsulator agents reduce heat and prevent oxygen supply
- Vermiculite-based type solutions provide effective heat absorption
- New formulations, application methodology and tools
- Utilizing the right extinguishing agents is essential for safety

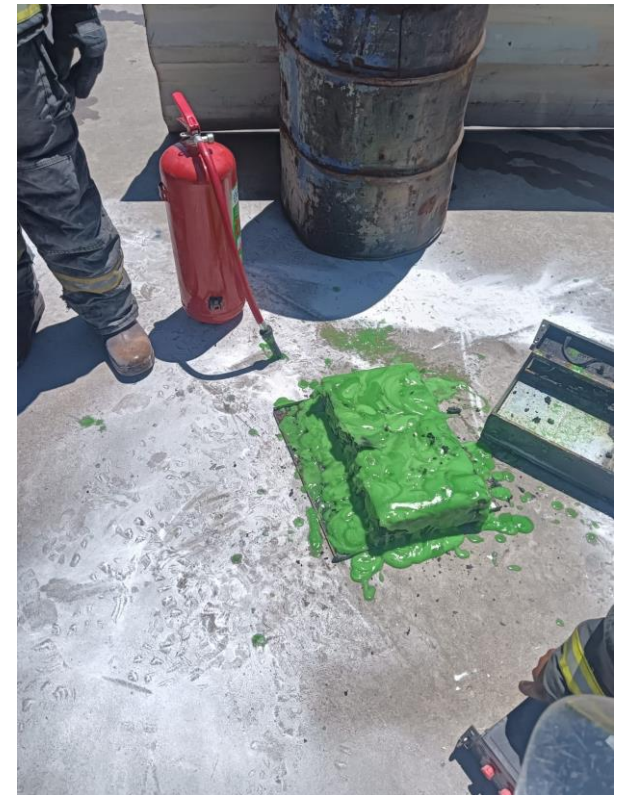


The Role of Specialized Lithium Extinguishers

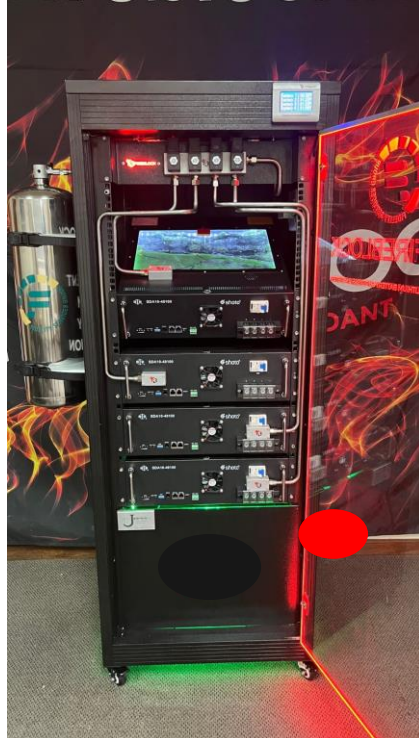


Challenges of Extinguishing Lithium Battery Fires

- Self-sustaining oxidation makes lithium fires difficult to control
- Deep-seated heat from batteries requires specialized techniques to address
- Reignition risks necessitate ongoing monitoring after suppression
- Environmental concerns arise from suppression runoff containment



Challenges of Extinguishing Lithium Battery Fires



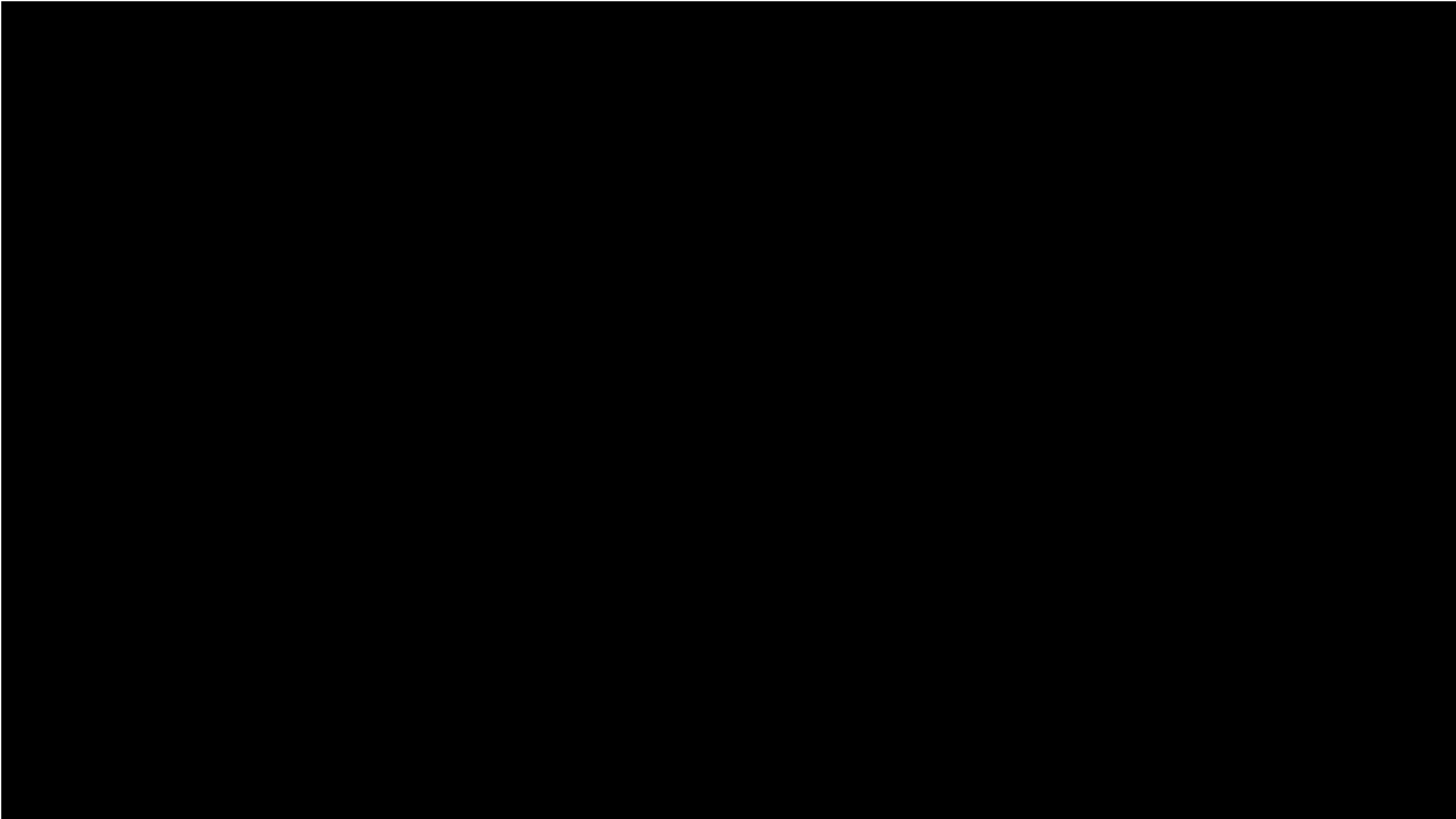
Public Awareness and Education

- Educating the public on lithium device safety is crucial
- Proper handling of lithium devices can prevent fire incidents (co-morbidities to be considered)
- Training for employees in high-risk industries enhances safety
- Community preparedness through drills and awareness programs is vital



Public Awareness and Education







Conclusion

What would
YOU
do?

Chemistry of Fire

Understanding fire chemistry is essential for effective fire safety and prevention strategies

Limitations of Traditional Extinguishers

Traditional fire extinguishers may not effectively combat all types of fires (momentary flame knock-down = YES, keep in mind, lithium batteries burn violently and continuously)

Specialized Lithium Extinguishers

Specialized extinguishers are designed to tackle the unique challenges posed by lithium battery fires, enhancing safety

Thank you!

It was an honour and a privilege

Q & A

Which elements are you most curious about??

