FIRE BUCKET

January, 2025

A publication of the Central Ohio Chapter of the Society of Fire Protection Engineers

SFPECOC Web Site

Next Meeting

Date: January 8, 2025

Location: Viking SupplyNet
2353 International St, Columbus, OH 43228

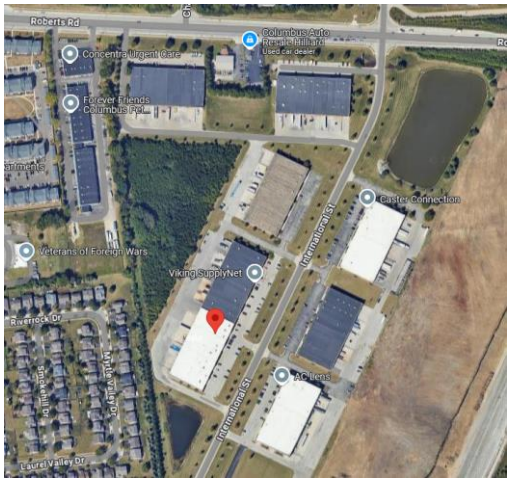
Speaker: Bryan Berkley Business Development Viking SupplyNet

Topic: Lithium-Ion Battery Protection

Cost: $23.00 (Members)
$28.00 (Non-members)

Make Reservations with:
Cory Blair
cblair@gbsalarm.com
614-702-1607

Reservations Deadline: Friday January 3, 2024 – 4:00 P.M.



Everyone who plans to attend, including pre-paid members, must make a reservation and check-in with John Falk at the meeting.

Meeting fees can be paid online at https://sfpe-centralohio.square.site/

SFPE - Central Ohio Chapter
On-Line Payment Center

The site works in Chrome, Edge and on iPhone. It does not work on Internet Explorer.

Annual Chapter Dues

The annual chapter dues are $20. The dues are used to support the chapter operations and promote our chapter. The annual membership runs from September to September. The meetings do not carry over from year to year.

You can pay your annual dues on our Chapter On-Line Payment Center. This secure site is operated by Square. Click here to go to the site.

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Future Meetings

Chapter Meetings
Date: March 12, 2025 - TBD
Date: May 14, 2025 - TBD

Golf Outings
Burn Center Outing – September 22, 2025

SFPE – Burn Center Outing Generates $70,000 Donation

The 35th Annual Burn Center Outing was held Monday September 23, 2024 at The Medallion Club. The outing sold out with a total of 196 golfers. The outing was won by the Columbus Firefighters with a score of 12 under par.

The outing generated a **$70,000** donation.

Nationwide Children's Hospital hosted the checks presentation November 12th. A tour of their burn unit was made after lunch

Representatives from both hospitals were available to receive the donation.

The 2024 outing was our largest outing in our 35-year history. It also generated our largest donation. It the 35 years of this outing, the outing has generated over $665,000 in donations.

Thanks to all of those who participate.

Information is posted on our chapter web site
Burn Center Page

FAA: Lithium battery fires on flights now occur nearly twice a week

Source: MSN

As millions prepare to fly for the holidays, the Federal Aviation Administration is warning travelers about a hidden danger in their luggage: lithium-ion batteries. Found in everyday devices like laptops, tablets and even electric toothbrushes, these batteries can catch fire if they overheat or are damaged.

FAA data shows that lithium battery fires on U.S. flights have risen 388% since 2015, now occurring nearly twice a week.

"Any fire at 30,000 feet is unacceptable," said David Wroth of UL Standards & Engagement, a safety research organization.

A survey of more than 800 flight attendants conducted by UL found that 87% are concerned about lithium battery risks on airplanes, and

more than a third believe airlines should do more to ensure passenger safety. While the FAA requires airlines to include general safety information in preflight announcements, those warnings often don't address the specific risk of battery fires.

The UL survey also found that one in four passengers admits to packing lithium batteries in their checked bags. It is a dangerous practice for one reason in particular: It would be even harder to put out a fire in the plane's cargo hold.

CBS News contacted American Airlines regarding the incident at the San Francisco airport and potential updates to its safety announcements. The airline did not address the question directly but stated that its flight attendants receive thorough and ongoing training to handle emergencies onboard.

For the complete story, click here.

Lithium-Ion Battery Fire: What Causes It & How to Control It

Source: Human Focus

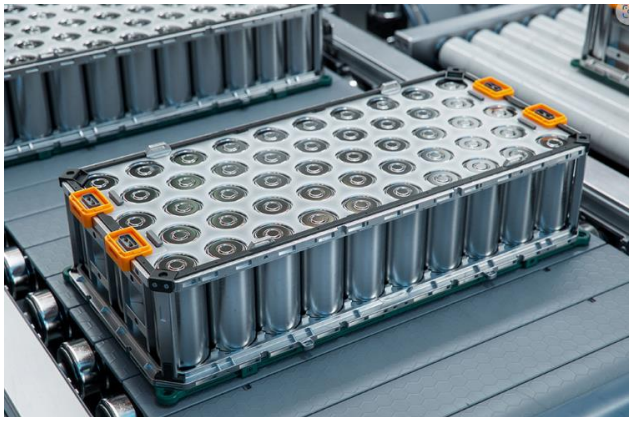
Lithium-ion batteries have become common in our daily lives, powering devices from mobile phones and laptops to electric vehicles and energy storage systems. Their size, efficiency and rechargeability make them a popular choice. However, this convenience comes with an often-overlooked hazard: the risk of lithium-ion battery fires.

Knowing what causes these fires and how to prevent and manage them can help keep homes and workplaces safe.

Key Takeaways

- Lithium-ion batteries are rechargeable, lightweight, long-lasting and highly efficient.
- The chemical makeup of lithium-ion batteries makes them susceptible to overheating if not managed properly.
- Lithium-ion battery fires are typically caused by thermal runaway, where internal temperatures rise uncontrollably.
- Lithium-ion battery fires can be prevented through careful handling, proper storage and regular monitoring.
- Fire extinguishers explicitly designed for lithium-ion battery fires are the best to use. Class D or Class B (carbon dioxide) can also be used but are less effective.

What are Lithium-Ion Batteries?



Lithium-ion batteries, also known as Li-ion batteries, are rechargeable batteries that store energy by moving lithium ions between two electrodes.

These batteries are known for their high energy density, lightweight design and long lifespan. Li-ion batteries are found in:

- Consumer Electronics: Smartphones, laptops, tablets and cameras.

- Electric Vehicles (EVs): Cars, bikes and scooters.
- Renewable Energy Systems: Solar battery storage units.
- Industrial Equipment: Power tools, drones and robotics.
- Medical Devices: Portable monitors and ventilators.
- Household Appliances: Cordless vacuums and electric toothbrushes**.**

What Causes Lithium-Ion Battery Fires?
The chemical composition that makes Li-ion batteries so efficient also makes them susceptible to overheating if mishandled. Thermal runaway, where the internal temperatures of the batteries rise uncontrollably, is the leading cause of battery failure, leading to fires.
This can occur due to:

- **Physical Damage**: Dropping or puncturing a battery can damage its internal structure.
- **Overcharging**: Charging beyond the battery's limit can cause overheating.
- **Manufacturing Defects**: Flawed components or assembly errors increase fire risks.
- **External Heat Exposure**: High ambient temperatures or heat sources can trigger a fire.
- **Improper Disposal**: Crushing or mishandling discarded batteries can cause fires, especially in waste processing environments.

How Do These Fires Occur?
Once thermal runaway begins, the battery's temperature rises rapidly, often exceeding 700°C to 1000°C. This extreme heat causes the battery's cells to break down, releasing flammable gases. If the battery is in an enclosed space, these gases can form a flammable vapor cloud explosion (VCE), further increasing fire risks.

As the heat builds, the battery cells rupture and ignite. The fire spreads quickly as more cells decompose and vent gases, creating a chain reaction.

Unlike other types of fires, which typically burn at a steady rate, lithium-ion battery fires escalate much faster and are significantly more difficult to control.

Large batteries, like those in electric vehicles, may reignite hours or even days later, even after they have been cooled.

How Can You Control Lithium-Ion Battery Fires?
Controlling a lithium-ion battery fire requires a specific approach due to the unique chemical reactions involved. Here's how such fires can be managed:

1. **Evacuate the Area:** Immediately evacuate everyone from the area where the battery fire has occurred.
2. **Use Fire Extinguishers:** Fire extinguishers explicitly designed for lithium-ion battery fires are the best to use. Class D or Class B (carbon dioxide) can also be used but are less effective.
3. **Isolate the Battery:** If safe, move the device or battery to a non-flammable surface.
4. **Cool the Area:** Use sand or other non-flammable substances to smother flames and absorb heat.

5. **Call Professionals:** Notify emergency services immediately, especially for large fires.

For the entire story click here:

Fire Tears Through Lithium Battery Plant in Missouri

Source: Yahoo News

Fire swept through a large battery-recycling plant in Fredericktown, Missouri, on Wednesday, October 30, prompting evacuation orders in the area.

The blaze broke out at a lithium-ion-battery processing plant owned by Critical Mineral Recovery. On its website, the company says the 225,000-square-foot plant is used to "recycle lithium-ion-battery-related materials from battery manufacturers, automotive OEMs, battery dealers, recyclers, and processors worldwide," and describes it as "one of the largest lithium-ion battery processing facilities in the world."

The dense smoke billowing from the blaze prompted Madison County authorities to issue evacuation orders in one area of Fredericktown. Other local residents were advised to shelter indoors.

Video transcript

Brand new battery plant just completed a couple of months ago going up in flames. Fredericktown, Missouri, it's called critical recovery.

Wow.

I mean, it is serious fire.

It's breaking out flames coming out of the outside.

It's gonna be a absolute complete loss.

There is no way to put that out.

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Fredericktown, Missouri.

Hotel at Fort Rapids Waterpark suffers massive fire days after approved sale

Source: WCMH

COLUMBUS, Ohio (WCMH) – Three days after the sale was approved to turn a former indoor water park building into affordable workforce housing, the Columbus Division of Fire responded to a massive fire to the property. Crews went to the building formerly known as Fort Rapids Indoor Waterpark Resort at 11:45 p.m. Sunday night, when a witness said something was burning in the area, according to Battalion Chief Jeffrey Geitter. When firefighters arrived, a significant fire was spotted

from the rooftop of the two-story hotel section of the resort.

The building was boarded up, making it difficult for crews to fight, Geitter said. While the fire caused significant damage to the vacant building, it did not equate to a total loss.

Investigators had not determined a cause of the fire yet, nor did Geitter have an estimate of the financial cost of the damage by Monday afternoon. He did confirm no injuries have been reported.

Fire in Industrial or Manufacturing Properties

Source: NFPA

From 2017–2021, United States fire departments responded to an estimated annual average of 36,784 fires at industrial or manufacturing properties (including utility, defense, agriculture, and mining properties). The associated annual losses from these fires included 22 civilian deaths, 211 civilian injuries, and $1.5 billion in direct property damage. This annual average of 36,784 fires can be broken down into the following categories:

- 25,021 (68 percent) outside or unclassified fires
- 8,077 (22 percent) structure fires
- 3,687 (10 percent) vehicle fires

Structure fires more commonly occurred in manufacturing or processing properties (63 percent) than in industrial properties, including utility, industrial, defense, agriculture, and mining properties (37 percent). Structure fires accounted for the largest shares of civilian injuries (73 percent) and direct property damage (66 percent).

Equipment or heat source failure was a leading cause of structure fires in industrial and manufacturing properties. Electrical distribution, lighting, and power transfer equipment was identified as the leading equipment involved in ignition in industrial properties, while shop tools was the leading equipment category involved in manufacturing property fires.

Vehicle fires more commonly occurred in industrial properties. Of those vehicle fires, 41 percent occurred in agricultural facilities. These fires were more common in the fall months, particularly in October, likely due to harvesting activities.

The largest percentage of civilian deaths (48 percent) resulted from vehicle fires.
Structure fires were classified as intentional in 11 percent of the industrial property fires and 3 percent of the manufacturing property fires.
Vehicle fires were classified as intentional in 9 percent of the industrial property fires and 3 percent of the manufacturing property fires.

As shown in Figure 1A, fires at industrial and manufacturing properties have fallen substantially over the past three decades, from 114,500 fires in 1980 to 38,738 in 2021, a 66 percent decrease. Note: A new version of the National Fire Incident Reporting System (NFIRS 5.0) was introduced in 1999 and

gradually adopted by fire departments. Because data for the transition years of 1999 to 2001 are volatile, estimates for those years are not shown. Unless otherwise specified, the industrial properties category refers to properties with NFIRS codes 600 to 699 (Industrial, Utility, Defense, Agriculture, Mining). The manufacturing properties category refers to properties with NFIRS code 700 (Manufacturing or processing).

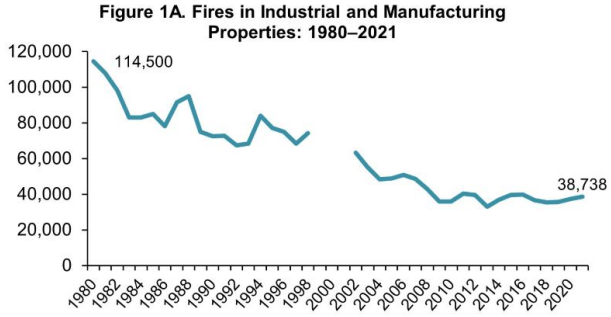


Figure 1D shows the annual direct property damage adjusted for inflation was somewhat lower than it was in 1980, but the trend is inconsistent and subject to considerably more year-to-year fluctuation

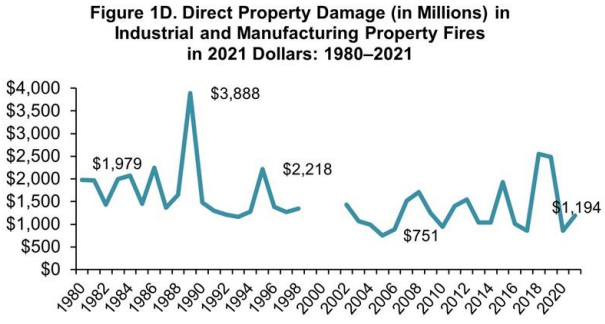
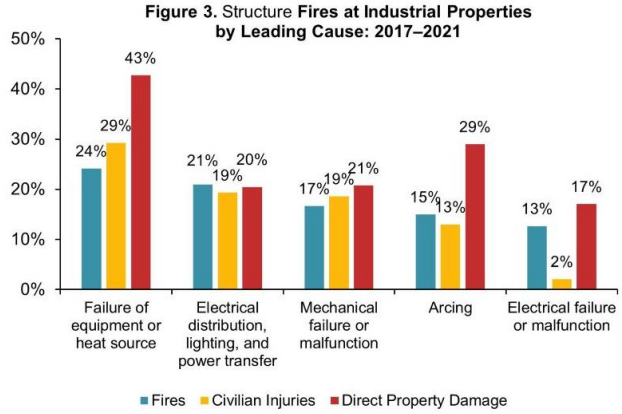


Figure 3 shows the leading property types attributed to the fires



Click Here for the complete story

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Society of Fire Protection Engineers
Central Ohio Chapter

APPLICATION FOR MEMBERSHIP IN THE CENTRAL OHIO CHAPTER OF SFPE

☐ NEW ☐ RENEWAL

NAME _____

COMPANY _____

ADDRESS _____

PHONE NUMBER _____

E-MAIL ADDRESS _____

ARE YOU A NATIONAL MEMBER IN SFPE? ☐ YES ☐ NO

The annual are $20. We also offer a One-Pay option. For $112, you get you annual dues and the 5 chapter meetings. The MCACO meeting is not included. You must pay the full $112.00 with this membership application or renewal to take advantage of this new program. Annual membership runs from September to September and the meetings do not carry over from year to year. Membership in the Chapter includes the member fee for meetings, and a subscription to *The Fire Bucket*, our Chapter's Newsletter

You can pay your annual dues on our Chapter On-Line Payment Center. This secure site is operated by Square. Click here to go to the site.

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Westerville, OHIO 43082
Jcf_sr@yahoo.com

Please make check payable to *Central Ohio Chapter, SFPE*.
Applications can be submitted at the next meeting. Please complete a new application every year, so we can keep our database current. Dues run from September 1st to August 31st of each calendar year.