evfiresafe.com

GLOBAL ELECTRIC VEHICLE BATTERY FIRES JANUARY 2022

EVs are less likely to catch fire than internal combustion vehicles...here's what we know

Why EV FireSafe?

Transport emissions account for:

25%

of global greenhouse gas emissions, which has led to the rapid electrification of vehicles

EV battery fire incidents have led to concerns about emergency responder safety when attending

EV lithium ion traction battery fires

To enhance emergency responder safety, we researched plug-in (BEV & PHEV) passenger electric vehicle battery fires from

2010 - 2022

breaking down our findings here & at evfiresafe.com

How many EV battery fires?

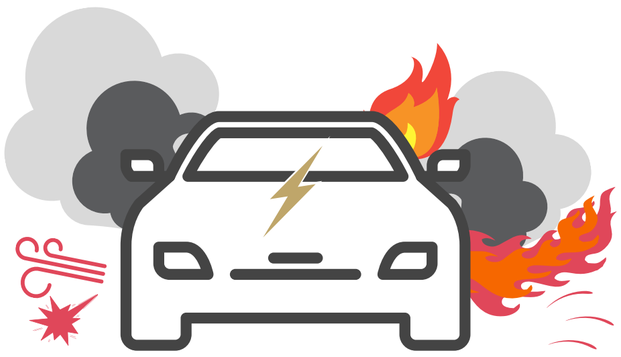
From 2010 - 2020, the EV FireSafe research team found:

104

verified* EV traction battery fires globally

+ 27

unverified - from a reliable source, waiting on further info



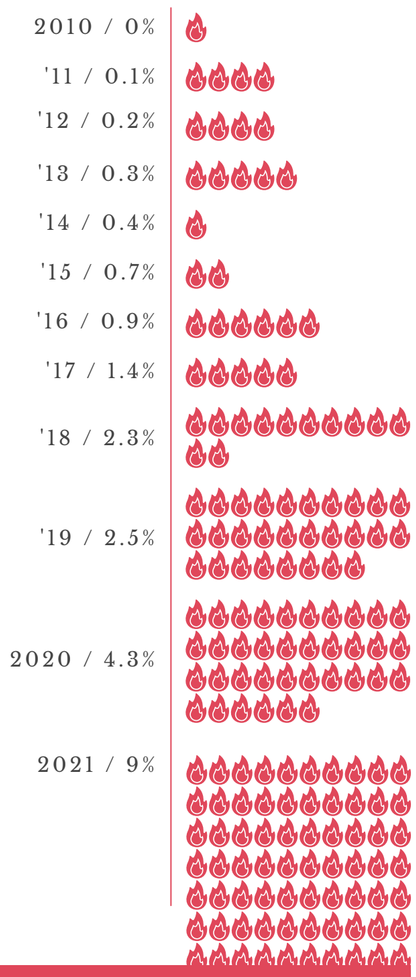
*'In the world of clean energy, few areas are as dynamic as the electric car market. We estimate there are now around **16 million electric cars on the road worldwide**...'*

International Energy Agency, January 2022

*Not exhaustive. From more than one online source, interviews, first hand accounts, videos, images, academic & fire agency reports & online training

When did they occur?

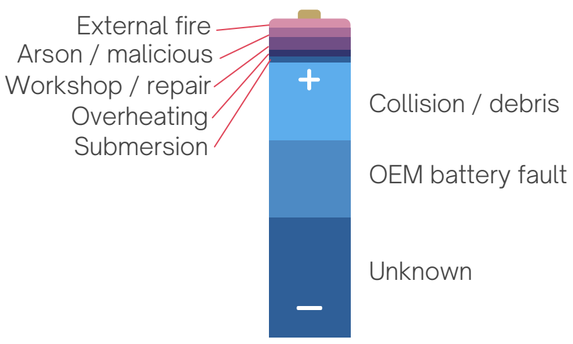
By year & EV global market share:



EV battery fires are rare, but present new risks & challenges for emergency responders when they do occur. From these verified incidents, we found:

Cause

Battery cell abuse, leading to thermal runaway & ignition or explosion, caused by:



Location

31.54%

Underground / enclosed spaces

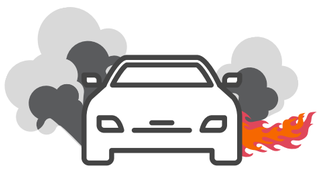
31.54%

Outside & parked

28.46%

Outside & driving

Ignition vs explosion



89.23%

Ignition
Jet like, directional flames

10.77%

Vapour cloud explosion
Violent deflagration

Vapour cloud explosion

Of total vapour cloud explosion incidents:

64.3%

Underground / enclosed space

35.7%

Open air

Charging

Of total incidents:

26.15%

EV connected to energised charging

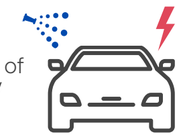
4.62%

EV disconnected from energised charging within 60 minutes

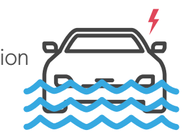
Electrocution

We found NO reports or evidence of electrocution or near miss of emergency responders from:

Direct stream of water on HV



Submersion



Extrication of occupants

Stranded energy

But electrocution is still a risk!

Enhancing safety for emergency responders at electric vehicle traction battery fires