

ELECTRIC VEHICLE FIREFIGHTING CLASS REMINDERS

1. Don't get complacent. Remember the warning signs:
 - a. Popping, whistling, or other venting sounds
 - b. Exposed battery or orange-colored parts
 - c. Smoke
 - d. Flame
 - e. Fluid leaks
2. Vehicle identification: Watch for vehicle labels, charge ports, and orange colored components.
3. EVs and hybrids have TWO batteries – One 12V and one high voltage (typ. 300+ Volts)
 - a. Cut Loop tags mark 12V control circuits, not high voltage
4. Is there room to work?
 - a. Immobilize as-is or after moving because EVs can move silently.
 - b. CHOCK wheels, PARK brake, PARK shifter, OFF power
 - c. Don't get trapped in confined spaces and have an oversight person.
5. Three fuels: 1. Vehicle interior and plastics. 2. Batteries. 3. Surrounding structure or materials.
6. Use SCBA and cover **all** skin. Batteries can spit sticky burning material.
 - a. Smoke can be flammable and may contain acids or metals. Protect bystanders.
7. DANGER - Arc flash hazard and energy stranded in battery case are invisible dangers.
 - a. Heat and impact damage destroy internal insulation.
 - b. Do not puncture or put any pressure on a potentially damaged battery.
 - c. Do not handle orange or exposed battery internals.
 - d. Batteries have re-ignited days after being extinguished.
 - e. Even if no longer smoking do not trust a battery which has undergone thermal runaway.
8. High voltage batteries may require cooling bottom of vehicle to extinguish.
 - a. Electricity found to not travel up a water stream to nozzle.
 - b. Water stream into vehicle interior does not reach a burning/smoking battery beneath.
 - c. If battery is breached, train water stream INTO casing to flood and cool cells.
9. Cover door sill and rocker panel during extrication to redirect potential venting.
10. Turn off power to charge station(s). Damaged cabinets may be energized.
11. ISO 17840 - Information For First And Second Responders, Road Vehicles
 - a. Information For First And Second Responders, Road Vehicles
 - b. Rescue Sheet(s)
 - c. **Identification** / recognition
 - d. **Immobilisation** / stabilisation/ lifting
 - e. **Disable direct hazards** / safety regulations
 - f. **Access to the occupants**
 - g. **Stored energy** / liquids / gases / solids
 - h. **In case of fire**
 - i. In case of immersion
 - j. Towing / transportation / storage
 - k. Important additional information
 - l. Explanation of the used symbols
12. Find emergency response guides and responder sheet links with search: **EV ERG NFPA**
13. Resources: **www.EVSafetyTraining.org** **www.ulfirefightersafety.org**