

POTENTIAL HAZARDS**FIRE OR EXPLOSION**

- Lithium ion and sodium ion batteries contain flammable liquid electrolyte that may vent, ignite and produce sparks when subjected to high temperatures ($> 150^{\circ}\text{C}$ (302°F))), when damaged or abused (e.g., mechanical damage or electrical overcharging).
- May burn rapidly with flare-burning effect.
- May ignite other batteries in close proximity.

HEALTH

- Contact with battery electrolyte may be irritating to skin, eyes and mucous membranes.
- Fire will produce irritating, corrosive and/or toxic gases.
- Burning batteries may produce toxic hydrogen fluoride gas (see GUIDE 125).
- Fumes may cause dizziness or asphyxiation.

PUBLIC SAFETY

- **CALL 911. Then call emergency response telephone number on shipping paper.** If shipping paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- Keep unauthorized personnel away.
- Stay upwind, uphill and/or upstream.
- Ventilate closed spaces before entering, but only if properly trained and equipped.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing provides thermal protection **but only limited chemical protection.**

EVACUATION**Immediate precautionary measure**

- Isolate spill or leak area for at least 25 meters (75 feet) in all directions.

Spill

- Increase the immediate precautionary measure distance, in the downwind direction, as necessary.

Fire

- If rail car or trailer is involved in a fire, ISOLATE for 500 meters (1/3 mile) in all directions; also initiate evacuation including emergency responders for 500 meters (1/3 mile) in all directions.

EMERGENCY RESPONSE

FIRE

- A lithium ion or sodium ion battery fire may reignite at any point after the initial fire is extinguished, up to weeks later.
- Use thermal imaging, if available, to continuously monitor the battery.
- Reignition can be accompanied by off-gassing of white smoke or electrical arcs or sparks that reignite with visible flames or fire.

CAUTION: The use of salt water for firefighting is not recommended since it may increase production of hydrogen and hydrogen fluoride gas.

Vehicle Fire

- If battery is not connected to a vehicle, see “Small Fire or Fire Involving Small Battery” below.
- Check manufacturer’s specific emergency response guide before attempting to disable vehicle.
- Turn off the ignition and disconnect the 12-volt battery if it can be done safely.
- Never cut the high voltage (HV) or medium voltage (MV) cabling.
- Never touch damaged or submerged HV or MV cables or components.
- If available, use **large amount of water** to extinguish or suppress a high-voltage battery fire. Using small amount of water could release toxic gases.
- If possible, spray water directly onto battery.
- DO NOT pierce, cut, pry, or dismantle any of the vehicle’s structure to access the battery. Contact with a high voltage component may cause an electric shock.

Small Fire or Fire Involving Small Battery (e.g., personal electronic devices, e-bike, etc.)

- Water spray only (large amounts); do not use dry chemical, CO₂ or Halon®.

Large Fire or Fire Involving Large Battery or Multiple Small Batteries

- Allow battery fire to burn itself out and protect surroundings.
- Safely remove undamaged containers from area.
- Apply water spray to neighboring batteries to reduce the spread of the hazard.

SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames) from immediate area.
- Do not touch or walk through spilled material.
- Absorb with earth, sand or other non-combustible material.
- Leaking batteries and contaminated absorbent material should be placed in metal containers.

FIRST AID

Refer to the “General First Aid” section.