

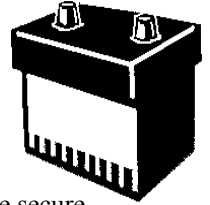


Company Name: _____ Job Site Location: _____

Date: _____ Start Time: _____ Finish Time: _____ Foreman/Supervisor: _____

Topic 532: Battery Charging and Handling

Introduction: Batteries are a combination of two or more cells connected to produce electric energy. Batteries produce hydrogen and sulfur gas mixtures which are highly flammable, or even explosive. Following are safety guidelines for the safe charging and handling of batteries:



Heavy Equipment, Industrial Truck, Truck, and Other Vehicle Batteries:

- **Service** your battery whenever you change your vehicle's oil. Check the fluid levels if the battery is not sealed, and clean your terminal connections (posts and cable ends). Ensure that all connections to and from the battery are secure.
- **Batteries** will lose the ability to accept or hold a charge over time. Replace your battery every three years or as needed.
- **Battery charging** installations must be located in areas designated for that purpose. Smoking is prohibited in the charging area.
- **Facilities must be** provided for flushing and neutralizing spilled electrolyte (any chemical compound that ionizes when molten, or in solution, allowing it to conduct electricity), for fire protection, for protecting charging apparatus from damage by trucks, and for adequate ventilation for dispersal of fumes from gassing batteries. Always wear the proper protective equipment.
- **An eye wash station** must be located near the battery charging station.
- **A conveyor**, overhead hoist, or equivalent material handling equipment must be provided for handling batteries.
- **Reinstalled** batteries are required to be properly positioned and secured in the truck.
- **A carboy tilter** (a large glass or plastic bottle enclosed for protection in basketwork, or in a wooden crate, used as a container for corrosive liquids), or siphon must be provided for handling electrolyte.
- **When charging** batteries, acid is required to be poured into water. Water must not be poured into acid.
- **Trucks are required** to be properly positioned and brakes applied before attempting to change or charge batteries.
- **Care must be** taken to assure that vent caps are functioning. The battery (or compartment) cover(s) are required to be open to dissipate heat. Make sure the ventilation system is working properly, ensuring a safe atmosphere.
- **Precautions** are required to be taken to prevent open flames, sparks, or electric arcs in battery charging areas.
- **Tools** and other metallic objects must be kept away from the top of uncovered batteries.
- **Hydrogen** and sulfur gas mixtures, which are highly flammable or even explosive, may accumulate under the hood and must be allowed to dissipate. Use of an air monitoring system will ensure safe work conditions.
- **Always** have a working fire extinguisher nearby. Make sure all employees are trained in how to use the fire extinguisher.



Electric Motor Batteries: Provisions are required to be made for sufficient diffusion and ventilation of gases from storage batteries to prevent the accumulation of explosive mixtures. Make sure the ventilation system is specifically designed for the storage area.

When a vehicle needs to be moved (immediately) that has a dead battery, follow these safety procedures to safely jump start that vehicle:

- **Connect** the jumper cables to the battery of the disabled vehicle. Cables are colored to keep from cross connecting batteries and causing a short. Always connect the red (or other brightly colored) cable to the positive (+) terminal of the battery, and the black cable to the negative (-) terminal.
- **The negative (-) or ground cable will typically emit a small spark upon connection. It may ignite battery gases and cause a fire or explosion of the battery. Connect to a ground away from the battery.**
- **After the engine starts**, carefully disconnect the jumper cables ensuring that the clamps do not touch until both vehicles are disconnected. Use extreme caution around moving engine parts such as the cooling fan, belts, and pulleys.

Personal Protective Equipment: Safety goggles, safety glasses, rubber gloves, particulate masks, respirators, safety clothing (aprons). If battery acid (electrolyte) gets in your eyes, immediately flush with water for 15 minutes and seek medical attention. If battery acid gets on your skin, flush thoroughly with water. When irritation persists, seek medical attention. Read all MSDS that are applicable.

Conclusion: Ensure all employees are properly trained in the charging and handling of batteries. Always utilize these safety guidelines.

Work Site Review

Work-Site Hazards and Safety Suggestions: _____

Personnel Safety Violations: _____

Material Safety Data Sheets Reviewed: _____ (Name of Chemical)

Employee Signatures: _____
 (My signature attests and verifies my understanding of and agreement to comply with, all company safety policies and regulations, and that I have not suffered, experienced, or sustained any recent job-related injury or illness.)

Foreman/Supervisor's Signature: _____
 These guidelines do not supersede local, state, or federal regulations and must not be construed as a substitute for, or legal interpretation of, any OSHA regulations.