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Battery Handling Safety

We use batteries to power our cars, trucks, tractors, forklifts, construction equipment, and power tools.

There are different types of batteries.

For example, a lead-acid battery usually uses sulfuric acid to create the intended reaction. Zinc-air batteries rely on oxidizing zinc with oxygen for the reaction. Potassium hydroxide is the electrolyte in common household alkaline batteries. The most common electrolyte in lithium batteries is a lithium salt solution.

Because of these chemical reactions, if you handle and recharge batteries, you should use caution and follow safe work practices.

Four Main Battery Hazards:

These are the four main hazards associated with batteries:

1. Acid. The electrolyte in a battery is corrosive and can burn skin or eyes, eat holes in clothing, or even scratch a concrete floor.
2. Flammable gas. Batteries emit hydrogen gas, which is flammable. It ignites easily and can cause a fire or explosion if allowed to build up in a small area.
3. Electrical shock. Many of us are aware of this danger because we may have seen sparks fly when jumper cables are attached to a car battery. Some battery systems are capable of discharging at extremely high rates of current. Accidental shorting of terminals or cables can result in severe electrical arcing, causing you to get burned and shocked.
4. Weight. Batteries, like those used in forklifts, are heavy and require proper material handling equipment to lift them safely.

Safe Battery Handling:

A primary safeguard when handling batteries is utilizing the proper personal protective equipment (PPE).

Examples include:

- Safety glasses or goggles and a face shield to protect your eyes and face from chemical splashes.
- Rubber gloves provide both acid protection and electrical resistance to prevent shocks.
- Chemical apron—your clothes and body need protection as well.
- Safety shoes or boots to protect your feet from a spill.

Be sure to know where the eyewash and shower facilities are located in the Shop—within 25 feet of battery handling areas. An eyewash facility should be capable of flushing both eyes simultaneously for 15 minutes, and a safety shower that is capable of drenching the body.

Follow these best practices for charging batteries safely:

- Only complete this work task if you have been trained to do so.
- Charge batteries in designated areas to avoid open flames and sparks.
- Use appropriate equipment to load/unload batteries from equipment.
- Keep tools and other metallic objects away from uncovered batteries.
- Be sure the proper charger is being used for the particular kind of battery.
- Check that vent caps are in place to prevent overflow and spilling of electrolyte.
- Shut off the charger when connecting or disconnecting the battery.
- Use baking soda or an approved cleaning agent to neutralize spilled acid.

Summary:

Many accidents with batteries happen because workers do not know about safe handling procedures. Understanding battery safety is the way to protect yourself and your coworkers from serious injury.