



*General Industrial Battery  
Safety*

# *Changing and Charging Storage Batteries - 1910.178(g)*

- ❖ Battery charging installations shall be located in areas designated for that purpose.
- ❖ Facilities shall be provided for flushing and neutralizing spilled electrolyte, for fire protection, for protecting charging apparatus from damage by trucks, and for adequate ventilation for dispersal of air contaminants from gassing batteries.
- ❖ A conveyor, overhead hoist, or equivalent material handling equipment shall be provided for handling batteries.
- ❖ Smoking shall be prohibited in the charging area.
- ❖ Precautions shall be taken to prevent open flames, sparks, or electric arcs in battery charging areas.

# *Hazards Associated With Industrial Batteries*



- ❖ Hydrogen Gas
- ❖ Sulfuric Acid
- ❖ Shock
- ❖ Weight of the Battery

# *Hydrogen Gas*

- ❖ A by-product of the battery's charging process.
- ❖ Lighter than air.
- ❖ Flammable in nature.
- ❖ Explosive mixture at 4 – 74% by volume of air.
- ❖ Can not taste or see the gas vapors. You can smell the acid in the battery if it heats up.

# *Fire Precautions When Working With Batteries*

- ❖ Do not smoke in battery charging areas.
- ❖ Prevent open flames, sparks or electric arcs in battery charging areas.
- ❖ Charge batteries in a well ventilated area.
- ❖ Do not strike the sides of the battery with any spark producing item.
- ❖ Keep tools and other metallic objects away from uncovered batteries.
- ❖ Have an **ABC** dry chemical fire extinguisher in charging areas or readily available when “Jump Starting” a battery.

# *Sulfuric Acid Safety*

## PPE Requirements

- ❖ Safety Glasses
- ❖ Rubber Gloves
- ❖ Face Shield
- ❖ Rubber Apron

(Provide an eyewash within  
10 second of battery  
charging/cleaning areas)

## Hazards

- ❖ Ph <7
- ❖ Corrosive material
- ❖ Burns to skin
- ❖ Burns to eyes
- ❖ Never open the battery caps with your face directly over the battery.

# *Safe Handling of Batteries*

- ❖ Protect eyes from acid splash when removing cell caps.
- ❖ Keep tools and other metallic objects away from uncovered batteries.
- ❖ Ensure the battery's water cell levels are maintained.
- ❖ If a battery is “dead” do not attempt to “jump start” the truck. Call Automotive.
- ❖ Only add water to *charged batteries*.
- ❖ Use Baking Soda to neutralize spilled acid. Baking Soda is available through maintenance.

# *Shock Safety*



- ❖ Never touch both battery terminals with your bare hands at the same time!
- ❖ Remove rings, watches and dangling jewelry when working with batteries. The metal in the jewelry can cause a shock if they contacted the battery terminals.
- ❖ Only use insulated/non-conducting tools to remove cell caps. Never lay tools or other metal parts on top of a battery.



# *Changing Batteries*

- ❖ Industrial batteries used to power mobile equipment can weight upwards of 1,500 lbs.
- ❖ Use appropriate equipment to load/unload batteries from mobile equipment.
- ❖ Ensure you are trained in using the loading equipment.
- ❖ Ensure the battery is securely locked in place prior to pulling away from the battery changing area.
- ❖ Do not attempt to stop a battery if it slides out of the equipment.

# *Cleaning/Charging Batteries*

- ❖ Wear safety glasses, face shield, rubber gloves & apron.
- ❖ Ensure an eyewash station is readily available
- ❖ Dampen the top of the battery with water first.
- ❖ Place dry Baking Soda on battery.
- ❖ Let sit for a few minutes for acid to be neutralized.
- ❖ Rinse off with cold water.
- ❖ When adding water, use watering cans to avoid contact with acid and battery terminals.

# *Battery Safety*



Know the Hazards

Use the required PPE

No Open Flame