

Safety TOOLBOX TALKS

A ready-to-use training lesson to drive home the essentials of safety.

November 2011

Industrial battery safety

► Real-life accident

Wiping the sweat from his eyes, Orlando Ruiz headed to the stockroom on his powered pallet jack to get a sweatband. He tossed it on top of his battery, using it as a shelf. Then he drove back to his department and put the headband back on. A few hours later, his forehead began to itch and burn. Orlando had suffered slow chemical burns from sulfuric acid residue that the battery had left on his sweatband. His skin turned black and rubbery and began to peel off. After numerous doctors visits and two skin grafts, he still bears scars and discoloring on his face.

► Critical Safety Points

Industrial battery accidents range from chemical burns to explosions and crushing injuries. Four main hazards to watch for include:

- **Battery acid** – Batteries contain sulfuric acid, which is corrosive. It can burn through clothing and cause skin disfigurement or blindness.
- **Hydrogen gas** – Batteries give off hydrogen gas, which is flammable. If it accumulates, a single spark can ignite vapors and cause an explosion.
- **Electrical shock** – Rings, watches and metallic tools can cause shocks if they contact battery terminals.
- **Heavy weight** – Batteries are heavy and can cause severe muscle strains or crushing injuries, especially if they're dropped on a foot.

To prevent injury follow these guidelines when charging industrial batteries:

1. **Keep all heat sources away.** Welding, open flames, lighters and smoking are all prohibited in battery-charging areas.
2. **Apply the parking brake.** Always turn off the ignition before disconnecting the battery from a lift truck or other vehicle.
3. **Check that the battery is in good condition.** All vent caps should be in place and not broken or damaged. Don't make the same mistake as Orlando – don't touch the battery. Instead, check visually.
4. **Turn off the charger.** Make sure the charger is off before connecting or disconnecting it. Like pulling an energized plug out of a socket, removing the connection can produce sparks and ignite the battery.
5. **Open the battery compartment cover.** This allows the battery to vent so that heat and gases do not build up.
6. **Know how to handle an emergency.** Familiarize yourself with the location of eyewash facilities, fire extinguishers and spill equipment.

► Quiz Time

Find out how much participants learned during this meeting. Distribute copies of the quiz on the other side of this page. Grade the quizzes using the answers to the right.

Instructions:

Use Toolbox Talks to spark safety discussions. On the flip side is a quiz to make sure participants retain the valuable information.

Session Date _____

Supervisor/Instructor _____

Attendee List:

QUIZ ANSWER KEY (Quiz on other side)

1. **True.**
2. **False.** Hydrogen gas is flammable.
3. **False.** No heat sources should be near battery charging areas.
4. **True.**
5. **True.**
6. **D.** Both A and C.
7. **True.**

SAFETY MEETING QUIZ

Employee Name:	Signature:
Department:	Date:
Score: _____ / 7	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Trainer:	Signature:

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Question 1: Batteries contain sulfuric acid, which can cause severe burns and blindness if the acid contacts your skin or eyes.

True False

Question 2: Batteries give off hydrogen gas, which is extremely corrosive.

True False

Question 3: Welding operations can occur near battery-charging areas as long as the sparks are directed away from the battery chargers.

True False

Question 4: Before charging an industrial battery on a lift truck, you should always set the parking brake and turn off the ignition.

True False

Question 5: All battery caps should be in place and not broken or damaged.

True False

Question 6: When should you turn a battery charger off?

- A. Before connecting a battery to its charger.
- B. Before setting your parking brake and turning off the ignition of your lift truck.
- C. When disconnecting a battery from its charger.
- D. Both A and C.

Question 7: Before an emergency occurs, you should familiarize yourself with the location of emergency eyewash facilities, fire extinguishers and spill equipment.

True False

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