

Get a Charge Out Of Your Batteries - The Safe Way

Proper lift truck battery handling techniques are inexpensive, easy to learn and necessary.

Electric-powered lift trucks can offer low operating costs, high performance and minimal maintenance costs ... when they operate at their full potential. Electric lift trucks' operation (and productivity) depends greatly on the charging and proper handling of the lead-acid batteries that power them.

Lift truck batteries, like most lead-acid models used in industrial applications, are the equipment's primary source of power. But they also serve a second purpose for lift trucks - they act as counterweights for vehicle stability. Batteries are available in many different sizes from a variety of manufacturers. Regardless of the brand you use, however, you should be aware of several safety concerns lead-acid batteries present.

To learn more about them, and the related safety precautions, Material Handling Solutions spoke with John Hoover, product safety committee chairman for the Battery Council Intl. (an organization of battery manufacturers dedicated to promoting the safe use of lead-acid batteries) and vice president of quality assurance at Douglas Battery (a battery manufacturer)

Explosion

During the charging process, a lead-acid battery produces explosive mixtures of hydrogen and oxygen. A battery's self-discharge action also allows it to generate hydrogen gas even when it's not being used or charged. If the mixture inside the battery is accidentally ignited, a dangerous explosion could occur. "Contrary to popular belief, discharged battery acid isn't the most dangerous element of the explosion - flying debris is," explains Hoover. "The flying pieces of plastic that are blown as the battery explodes have the potential to damage an operator's eye or skin."

The solution: Only allow well-trained employees to handle and charge lift truck batteries. Provide employees with proper eye, face and hand protection. Make wearing acid-resistant gloves, apron, boots, arm gauntlets and a plastic face shield mandatory. Also, allow an employee to lean over a battery only when necessary to boost, test or charge it.

Electrical shock

Lead-acid batteries of all sizes can produce potentially dangerous shocks if not handled properly, says Hoover.

The solution: Before removing a battery from a lift truck, the lift truck's electrical circuit should be opened. The battery should also be unplugged and the lift truck's brakes should be set. Before a battery is connected to or disconnected from a charger, the charger should be turned off.

Shorts/sparks

A battery that experiences a direct short (for example, when a metal tool touches both terminals) can produce tremendous currents which could result in a short or spark that could seriously injure a worker. "Even small batteries can produce enough current to cause injury," Hoover warns.

The solution: Warn employees against wearing metal jewellery that could come in contact with battery terminals. Also caution them to keep tools and other metallic objects away from the tops of uncovered batteries.

Never permit smoking near batteries.

Battery acid

Battery acid, or electrolyte, is a solution of sulphuric acid and water that can destroy clothing and burn the skin. Hoover states that, "although skin burns aren't likely to be severe if immediately flushed with water (the solution is only about 37% acid by weight), electrolyte will dry out the skin and burn holes through clothing."

The solution: Use caution when handling electrolyte and keep acid-neutralizing solution, such as baking soda or household ammonia mixed with water, readily available.

Neutralize any electrolyte that spills on a vehicle, in a work area or on a person. After neutralizing, thoroughly rinse the contaminated area with clean water. Improving battery handling in your facility is a step to take today. Check to make sure that your fire-fighting, wash-down and other safety equipment is in working order and meets all your state or provincial codes. Following these precautions when working with lead-acid batteries is not only smart for batteries (by increasing battery life), it decreases the chances for a battery-related accident.